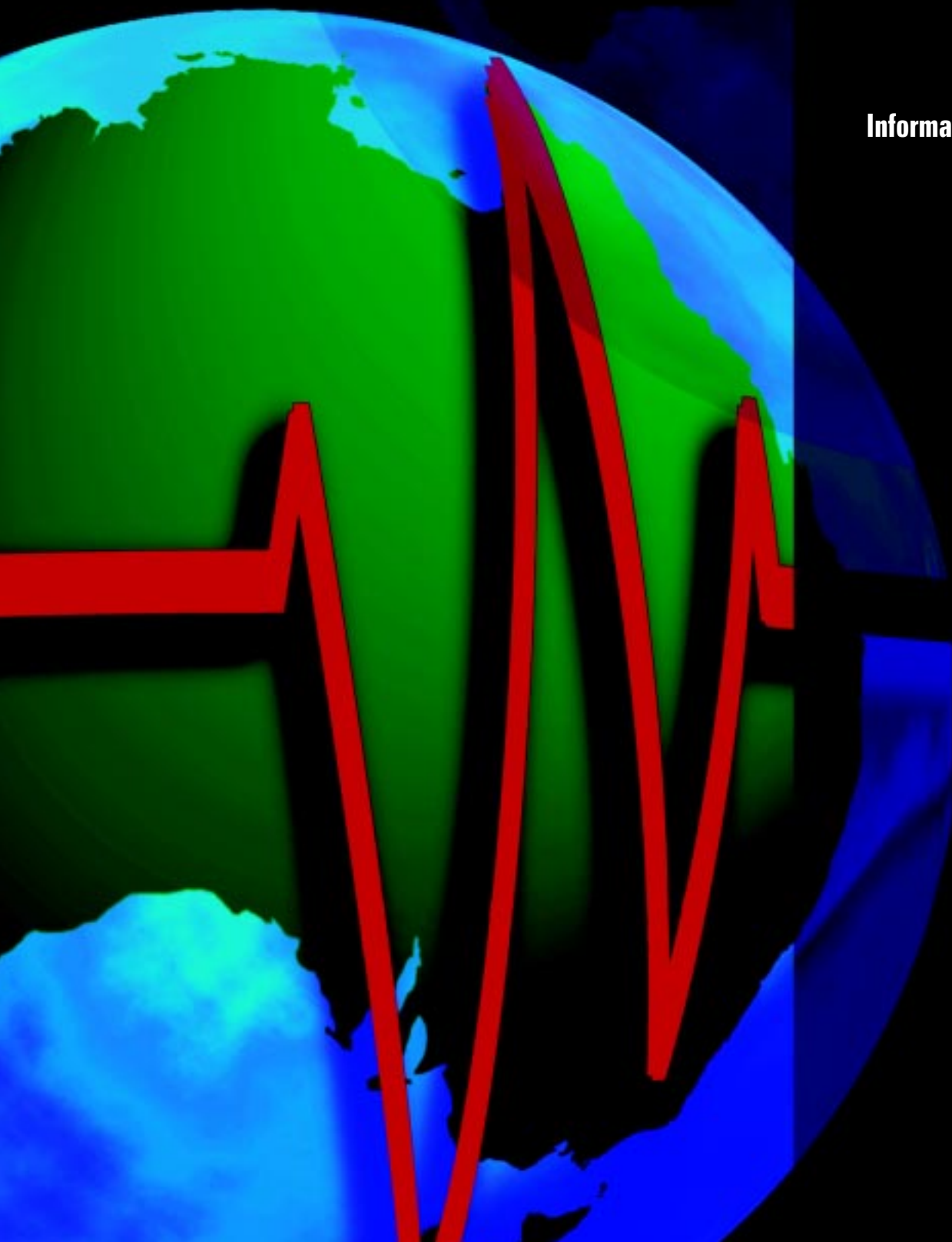


Health Online

A Health Information Action Plan for Australia

National Health
Information Management
Advisory Council

November 1999





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Foreword

Health Online: A Health Information Action Plan for Australia

On the threshold of a new millennium, we are poised to make major changes in the way that health care will be delivered in Australia. New and emerging information and communications technologies have enormous potential to improve the delivery of health care and achieve better quality of care and health outcomes through the effective and innovative use of health information.

Across Australia, in both the private and public sectors, a substantial number of projects are already underway with the aim of harnessing such technologies to build a better health care system. Much of this work, however, is happening in isolation, leading to fragmentation and duplication of effort and a waste of valuable resources that a relatively small country like Australia can ill afford. Health Ministers have recognised the need for a national collaborative approach to ensure that the enormous benefits that online technologies can bring to the health care sector are realised for all Australians. To this end the National Health Information Management Advisory Council has been established as an expert body to advise ministers on the most effective and efficient use of information technologies.

This first version of *Health Online: A Health Information Action Plan for Australia* has been developed by the Council, in collaboration with commonwealth, state and territory agencies as a blueprint for progressing the health information management/information technology agenda nationally. It provides a strategic framework to bring together the key stakeholders in the health care system and to develop a common vision and sense of purpose. Most importantly, it is intended to be a 'living' document, requiring updating and monitoring over time.

This version is now being distributed by the National Health Information Management Advisory Council as the basis for consulting with organisations and individuals with expertise or an interest in this area. *Health Online* will be modified and updated following these consultations.

Health Online is not about gathering information for information's sake. Rather, it is about using new technologies to communicate essential information for better decision-making across the health care system – better decision-making for consumers, providers, managers, policy-makers and the general public.

Underpinning all of the work articulated within *Health Online* is a commitment to ensuring that a robust framework is created to protect health information privacy. Personal health information is extremely sensitive and consumers must be confident that their information is valued and used wisely. Any initiative undertaken in the health information area must ensure that the community's right to privacy as well as its interest in achieving better health is upheld and protected.



The Commonwealth is now working with states and territories to develop a national approach to health information privacy protection that will set out the principles and guidelines by which information should be collected and used in accordance with individuals' informed consent. Legislation, which is expected to be introduced to Parliament in December 1999, will be based on the *National Principles for the Fair Handling of Personal Information* - which themselves have been developed by the Privacy Commissioner in consultation with consumer and industry groups. Legislation covering health information will provide a framework within which aspects of *Health Online* can be progressed.

Health Online is a landmark in information management for Australia. It places information at the heart of the health system. It aims to improve information flow, promote continuity of care, support clinical decision-making and empower consumers and communities. It is all about building a more efficient and effective health care system for this country through improved quality of care and patient safety.

On behalf of the National Health Information Management Advisory Council, it gives me great pleasure to present this vision for the Australian health care system.

I invite you to comment on *Health Online: A Health Information Action Plan for Australia* by writing to the NHIMAC Secretariat, Department of Health and Aged Care, MDP 12, GPO Box 9848, CANBERRA ACT 2601 or by email at nhimac.secretariat@health.gov.au. *Health Online: A Health Information Action Plan for Australia* is also available on the internet at www.health.gov.au/healthonline.

Professor Richard Smallwood
Chair

National Health Information Management Advisory Council
November 1999



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Part One — Vision and Direction

1.1 Introduction

The emergence of the 'global information economy' is progressively transforming the ways in which we live and do business in Australia — and there are enormous social and economic benefits that can be achieved for all Australians by taking advantage of these changes. Reflecting these opportunities, in December 1998, the Commonwealth Government released its strategy document *A Strategic Framework for the Information Economy – Identifying Priorities for Action*, which sets a national direction for Australia as regards the information economy and identifies key issues and priorities for action. It has been endorsed by the commonwealth and the states through the On-Line Council. As part of this overall strategy specific action plans are to be developed for ten priority areas, including health.

Health Online: A Health Information Action Plan for Australia has been developed by the Department of Health and Aged Care in consultation with states and territories and other key stakeholders as a national action plan for the health care sector. It aims to provide the basis for a national strategic approach to using information in the health system and to promote new ways of delivering health services, by harnessing the enormous potential of new technologies.

These new information technologies, including online or internet-based communications (the use of the term *Health Online* is not intended to limit the action plan to internet services only), have fuelled the growth of the information economy — and have supported its momentum. Their capacity to store, analyse and exchange large quantities of data rapidly and inexpensively in unprecedented ways offers opportunities to transform the way in which data and information are transmitted and managed in the health sector, just as it has in other sectors of the economy. However, this plan is essentially about the better use of information and delivery of services to improve the health of Australians and to further the objectives of our health system — and technology needs to be seen as the enabler (ie a means to an end rather than an end in itself).

Health Online has been developed in an environment where the privacy of individual health consumers is regarded as integral. It is intended to assure consumers that personal health information is viewed as being extremely valuable and that it will be kept private and used wisely.

While this plan is meant to provide a strategic view of the use of information in the health sector and set the agenda for



future national activities it is also intended to be a practical document. It does not aim to be a comprehensive record of all planned activities for the health sector but it does intend to describe key activities that need to be undertaken at a national level. A five year timeframe has been used for activities mapped out in this document.

Clearly, there is substantial activity occurring within the public and private sectors separate from the activities identified in this plan. While identifying these activities is beyond the scope of the current document, a possible area of future work could be to establish a register of projects being undertaken by the commonwealth, state and territory governments, the health sector, industry and other organisations that can be brought together under this strategic framework. This idea is discussed in the document as part of a proposal for a national clearing house.

1.2 The health policy context

Health represents a large component of the Australian economy, with annual expenditure by the public and private sectors being in the vicinity of \$43 billion in 1998. The commonwealth finances 45% of this expenditure through grants to the states and territories for hospital services (through Australian Health Care Agreements) and through rebates for medical services (Medicare Benefits Scheme) and pharmaceuticals (Pharmaceuticals Benefits Scheme). The state and territory governments provide 23% and the remaining 32% is financed privately (via private health insurance and out of pocket expenses).

On the basis of international comparisons, the Australian health care system is performing well. At 8.5% of the GDP, Australian health care expenditure is slightly under the OECD average for health. Australia also fares well in terms of health outcomes such as overall life expectancy and child mortality when compared to other OECD countries.

However, there are substantial challenges facing the long-term sustainability of the Australian health care system. Pressures on the health sector include:

- the increasing proportion of older persons in the population;
- the increasing use and changing consumer expectations of health services;
- the rapid increase in the number of new services and products resulting from advances in research and the availability of new technologies; and
- continuing inequalities in health care and outcomes among disadvantaged groups, particularly Aboriginal and Torres Strait Islander peoples.

In this context, Australian governments are committed to a set of objectives established as part of the Australian Health Care Agreements. These objectives are designed to ensure that the Australian health care system is world class. They include:

- maximising the health of individuals and the community;
- achieving a balance in the investment of health resources in individual and community health;
- responding flexibly to community and consumer needs;
- providing services that are integrated and coordinated;



- relying on an evidence basis for health care to achieve best practice in health services; and
- concentrating on proven services and on agreed priority areas.

Australia's health reforms

Australian health consumers expect ease of access, informed choice and decision-making, equity, accountability and quality, affordable services. Health systems all over the world are embarking on significant structural reforms to ensure consumers continue to enjoy high quality health care. Consistent with developments overseas, improvements in illness prevention, information access and patient and health service management are taking place in the Australian health care system. Features include:

- a move away from programs and providers to focus on consumers and outcomes;
- a flexible public/private sector mix that improves choice and efficiency;
- better population health through a restructuring of acute and primary care to achieve a greater emphasis on health care provided in the community;
- health sector services provided in different settings and with a focus on consumer satisfaction and patient outcomes;
- a collaboration within the health sector and integration of the different parts of the health system in a way that recognises the continuity of care that patients expect, to provide integrated, consumer focused packages of care; and
- reliable, accessible health information to support decision-making for consumers and providers.

The need to balance cost containment against increasing demands for health services has led to an increasing awareness of the need to deliver such services on the basis of sound evidence – that is, relying on treatments/interventions which have been shown to work best for a particular group of patients and conditions. This has, in turn, resulted in a proliferation of clinical practice guidelines and care pathways to enhance the quality of clinical decision-making. In addition, health-care professionals are under ever-growing pressure to acquire and retain vast amounts of knowledge as new treatments emerge and as consumers demand access to more information. Policy-makers and planners, faced with limited resources and the need to maximise efficiency at the same time as maximising the quality of care, are seeking greater amounts of comprehensible data to determine where and to whom the public dollar should be directed, and to measure how well services are being delivered.

In this context, there is increasing recognition of the importance of greater and better use of health information, including:

- access to up-to-date health information for consumers and providers;
- new and improved methods of communicating information among and between consumers and providers;
- sharing of information between service providers;
- sharing of information with health consumers; and
- collecting, collating and analysing information across health services, settings and populations.



1.3 Information and services

Health Online is primarily about how the collection and transfer of and access to health information can improve the health of all Australians and further the objectives of the health system as a whole. The use of the term information, however, is not meant to limit the scope of the plan to basic issues of information collection and access. The plan is also concerned with information transfer in interactive services and situations. Hence the scope of *Health Online* includes activities such as online access to medical consultations, online claims and electronic prescribing.

Information needs of key players

The health system in Australia is made up of a number of key stakeholders, namely health consumers, health providers and health policy makers and health managers. Each of these groups has a specific interest in health information and, given the possibilities created by new information and communications technologies, these groups are pressing for change.

Health consumers

As in other areas of life, many consumers of health services are seeking greater access to information, choice and the chance to exercise more control over their own health and well-being (as well as that of others they may act on behalf of — such as children). At the simplest level, health consumers are seeking access to information held about themselves. They want to know about the state of their own health, and are interested in what treatments or

interventions work and about any side effects. Having access to such information is also empowering and enables people to interact as informed consumers and make sensible choices within the health system.

Health consumers are also familiar with the convenience of online transactions in other walks of life — such as electronic banking and bill paying. Access to fast and convenient claims processing will be similarly expected of Medicare claims and prescribing services in the future. Much is made in the media of remote health service delivery (telehealth) and for many Australian living in rural and regional areas this will become an increasingly important means of accessing high-quality, real-time interactive health advice and assistance.

While accommodating the needs and interests of those consumers who characterise the 'information age', there also needs to be an acknowledgment that not all health consumers will find it easy or desirable to adapt to the next generation of information services.

Health providers

Health providers are living in a world of ever expanding advances in new therapies (eg in the form of new procedures and new drugs), greater emphasis on evidence-based health care, higher levels of consumer expectations, and better informed and more empowered consumers. There are a number of sources of information that health providers utilise, to ensure they can offer services in the best interests of patients and to provide better communications between providers and their customers. They include:



- information about individual patients held by other health providers;
- expert advice that is found in journals and known by their peers;
- guidance in the form of endorsed clinical guidelines and pathways; and
- peer support networks and access to second opinions.

Access to information from these sources is already available but it is often frustratingly delayed, not accessible when needed or, at times, inaccurate because of reliance on recall or on patient self-reporting. New ways of providing access to these sources of information (including methods such as electronic links to journals or professional 'chat groups') are part of the information challenge in health. In this context, the current low base of computerisation and information technology skills that currently exists in sectors such as general practice needs to be taken into account.

Notwithstanding the challenges to move the health sector towards greater take-up of information technology, there are already new sources of information being sought by health providers – such as built-in alerts and prompts to assist in treating and prescribing, and ongoing monitoring – all part of a growing range of decision-support services.

Policy makers and managers

In the health sector, as in government more generally, there is a growing demand to systematically assess the quality and outcomes of programs. There is also a greater emphasis on evidence-based health care. These pressures result in significant demands to collect, collate and analyse an ever-increasing volume of health data.

Governments and service providers are required to balance increasing demands for health services and products within constrained budgets. Australia's aging population and the increasing availability of new services and products driven by research and technology are all adding substantially to the need for policy makers and planners to be able to: forecast trends with greater accuracy; determine the cost-effectiveness of various treatments and interventions proposed for the same conditions; determine the contribution that health care makes to the health status of the population; evaluate where the most value for the dollar lies among the endless possibilities for devoting scarce resources to health care; assess the evidence basis of new and existing interventions; monitor and evaluate quality of care and health outcomes; identify best practice; identify where quality improvement is most needed and monitor improvements over time; and evaluate consumer and provider preferences for models of care and priority health outcomes. At a broader level of government accountability there is also pressure to demonstrate that large outlays of public funds are producing the hoped for outcomes and in as cost-effective manner as possible. In sum, there is a demand from policy makers and program managers (and governments) for better and more information about the effectiveness and efficiency of health program expenditures.

While policy makers are mainly concerned with issues of individual and public health, the health sector can also be viewed in the context of industry policy. Australia's reputation for excellence in health training and service



delivery, and its growing interest in the use of health information, including its pioneering work in telehealth services, means that potential exists to increasingly export health services. Thus, considerable opportunities may exist for Australian health providers and health information industries in the global market place (especially in the region).

1.4 A way forward

Health information initiatives and using new communications technologies should meet the expectations for better information and services, increasingly held by consumers, providers and managers — and by doing so, achieve the higher-level objectives of the health sector. In considering how to go forward, it is also important to have a statement of what the key stakeholders are committed to. The mission for *Health Online* is:

“To improve the delivery of health care and achieve better quality of care and health outcomes through effective and innovative use of health information.”

Securing a national approach — the need for partnership

The way ahead must acknowledge the importance of national collaboration. All over the world, information technology is being harnessed to deliver better targeted, more cost-effective health and welfare services. Countries such as the United Kingdom¹ and Canada² have already recognised the need for a national strategic approach to health information management and information technology,

in order to secure promised advantages for the nation as a whole. Adopting a national approach will also minimise the risks that might otherwise occur through ad hoc (and therefore likely incompatible) activities.

Until recently in Australia, information technology being used in a clinical context was mainly for telemedicine applications to deliver diagnostic and psychiatric services to rural and remote areas; in pharmaceutical and general practice settings to assist with dispensing and prescribing; and in hospital departmental initiatives such as pharmacy, radiology information systems and automated pathology systems. While Australia is among the world leaders in telehealth applications, its use of information technologies to support clinical services and to provide information to consumers is still in an early stage of development. However, states and territories are now embracing the potential for wider application in the health sector and are investing accordingly. The Commonwealth's role is to create the enabling environment, whereby the information framework is sufficiently robust and flexible to accommodate the needs for security, protection of data and intellectual property, professional autonomy and organisational dynamics – and to adopt a leadership and coordinating role where a national approach is necessary.

The benefits of adopting a national approach are considerable. The cost of information technology systems is high and a relatively small country like

1 National Health Service Executive, Information for Health: *An Information Strategy for the Modern NHS 1998 – 2005*, Dept of Health Publications, West Yorkshire, September 1998.

2 Advisory Council on Health Infostructure, *Canada Health Infoway: Paths to Better Health - Final Report*, Health Canada Publications, Canada, February 1999.



Australia needs to be able to maximise such investment through ensuring that open architectures with high connectivity and integration are the basis for such investment in both the public and private sectors. The Australian population is also increasingly mobile. Desirably, health consumers should be able to access their personal health information and it should be accessible across different services and across national (and international) borders in the interests of their own health care.

To enable such systems to interact with each other, common standards must be adhered to. The health sector needs the electronic functionality now enjoyed in other sectors of the economy (such as banking).

Currently the health information technology market in Australia is small and fragmented. By ensuring that systems are developed according to agreed national standards, industry will be in a better position to establish applications on a commercial scale. At the same time, to maintain Australian competitiveness on the world stage in this area, these standards must be consistent with international standards development.

Moreover, the Australian health care system itself is quite fragmented, with services straddling the private and public sectors and with different delivery mechanisms across jurisdictions. Much of the work that has been undertaken to date in health online technologies has been done in isolation. A national coordinated approach is needed to build on such work to create an integrated network.

The exchange of what Australians properly regards as highly sensitive personal health information with other parties also requires an acceptable legal and privacy

framework to be in place to ensure such information can be transferred to authorised users for approved purposes in a secure manner. Similarly, with the increasing use of telehealth, providers also need to have such frameworks in place. This will ensure that they are operating in a well-defined medico-legal environment in terms of the advice or treatment that they provide through online technologies – and that individual privacy is protected.

Currently, privacy protection is inconsistent across public and private sectors, with a mixture of statutes, acts and voluntary codes — and there is wide agreement that the existing self-regulatory arrangements would benefit from support and strengthening. Legal issues that concern the electronic exchange of information are still to be resolved. To avoid a piecemeal approach across Australia and lack of compatibility within the global market, a national approach is called for.

The Commonwealth is in the process of introducing legislation concerning the protection of personal information in the private sector. This will mean that, for the first time, national baseline legislation will cover the collection, transfer and use of personal information, including health information, in the private sector. However, additional legislative approaches will need to be considered as emerging technologies are used increasingly to communicate highly sensitive information across health and community settings to support integration and coordination of care and to make better policy and planning decisions.

Australian governments have committed themselves to this national approach through the creation of the National



Health Information Management Advisory Council. There are also existing structures that bring the Commonwealth and states together in partnership on information matters at the working level — such as the National Health Information Management Group. The Council, however, is a high-level body that provides advice to Health Ministers. It also has representation from key interest groups (consumers, providers and industry) as well as the Commonwealth and states and foreshadows a new commitment to forging partnerships with these groups.

Guiding principles

Planning for the way ahead will need to take account of a number of guiding principles. These principles have been informed by the need for a consumer focus, the need to get the basics right and the importance of achieving a balance between the public and private sectors. The principles are:

- consumers, providers and managers are encouraged to innovate in appropriate use of information and communication tools;
- information which is collected about individual health consumers is transferred and used with their knowledge and authority;
- information needed for research, policy and planning purposes should be generated as a by-product of operational systems primarily designed for other purposes (eg to achieve better health outcomes for individuals and groups, or to organise payments);
- health consumers and providers are engaged at all stages of planning and development of new information services;

- the public and individual interests will be protected — particularly in relation to privacy;
- governments should concern themselves with leadership, direction setting, and providing encouragement to the private sector, health providers and consumers to participate fully in the information economy;
- planning and coordination should be undertaken at the national level to ensure a high level of coherence and consistency, and to eliminate duplication and waste; and
- the costs and benefits of proposals to improve information management are assessed to ensure a value for money approach to investment.

1.5 Plans for action

The main focus of the *Health Online* document is the action plans it contains. These plans represent the current suite of projects that are designed to meet the overall mission, and in particular, are designed to deliver better information and services to consumers, providers and managers in the health sector. They are plans for activities that are nationally significant, and are complemented by many more projects that are underway in the states and territories. Plans will be changed and updated as new priorities are developed and old projects are completed. *Health Online* has also attempted to capture some sense of the future work that needs to be done by referring to some projects in name only — as a way of telegraphing ‘future work’ plans.

The action plans have been developed within a strategic framework that is designed to achieve the overall objectives



of *Health Online*. This framework is essentially to:

- build the national coordination mechanisms and partnerships as a first priority;
- get the building blocks (data protection, standards, infrastructure etc) established; and
- design and deliver important national initiatives (information and health services) that address the needs of key interest groups.

This framework is represented by the following key areas of work. The headings introduced here form the basis of the subsequent sections of *Health Online* — where the full details of the action plans are found.

Achieving national collaboration

This section contains projects that concern the establishment of national coordination and partnership arrangements designed to bring a nationally coordinated approach to the development of health information services Australia-wide. Coordination issues also include the need for a communication strategy and for information on activities in the sector to be available across jurisdictions.

Laying sound foundations

A number of building blocks are necessary to underpin the framework for information activities to be able to proceed. These are issues that particularly require national agreement and cooperation. With this agreement, many individual projects can proceed within jurisdictions that will prove to be compatible on a national basis. Without agreement, there is the potential for fragmentation that would resemble the 'rail gauge' problem of last century. Key

building block issues are data protection and other legal/security issues, standards, infrastructure issues, change management and training, and research and development.

Empowering consumers and communities for better health

As noted already in this document, health consumers are seeking more information, more choice and a greater say in their own health and well-being. Projects that form part of this section of *Health Online* recognise this and aim to tailor information and services to meet consumer expectations.

Supporting clinical care

This section of *Health Online* describes a number of projects that are designed to support clinical care. They cover the sharing of information for coordinated care, decision-support services and better access to current practice information.

Using information to build a more efficient and effective health care system

This section of the plan covers two critical areas of interest. The first concerns the efficiencies that can be achieved through the use of electronic data transfer — in areas like hospital supply chain activity, Medicare claims and electronic prescribing. The second area concerns projects that are designed to deliver better clinical and administrative data for research, policy and planning purposes. Ultimately, projects in this area are designed to inform health planners about health needs and about the effectiveness of various programs so that health resources can be applied to maximum effect.



Export of Australian 'online' health services

Health services in Australia are well regarded overseas. There are already exports of Australian health services of various kinds — particularly in Australia's region of the world. There is considerable scope to develop an export market for a range of health information, information industry and direct services delivered remotely. Some of this industry development work is speculative but this section describes action that can be taken that is designed to provide impetus for its growth.

1.6 The Australian health care system as an integral part of the information society

Health services and the management of the health sector will be transformed by better use of information, re-engineered health services, and the cost-effective use of information technologies. If firm foundations are laid (including such matters as privacy) and if the projects mapped out in this plan are implemented, Australia's future health care system could look like the following:

- consumers and providers, wherever they are located (in the city or the country), have on-line access to clinical records, clinical advice, specialist referrals, diagnostic tests and results, and other telehealth services;
- consumers have the opportunity to provide general practitioners, specialists, hospitals (public and private) and other health providers with access to information on their clinical histories held in comprehensive lifetime electronic health records (to which consumers themselves would

also have access), with controls to ensure security, maintain privacy and appropriate use and disclosure of data;

- there is a seamless delivery of care for the consumer with the right information being available at the time and place where care is delivered — and with greater integration and exchange between health and community sectors;
- relevant information from medical records is integrated into clinical decision-support systems;
- consumers and providers have ready, electronic access to information to support informed choices among potential treatments and so provide better quality health service at the time and point of delivery;
- consumers, providers and managers have access to high quality data for performance information development for benchmarking and quality improvement purposes;
- all providers are linked with the key funders of the system (such as private health insurance funds and the Health Insurance Commission) to enable online, real-time transactions, including forwarding referral information and pharmaceutical prescriptions;
- data are gathered as a by-product of operational systems to support research into improved promotion, prevention and treatment, and to provide a foundation for public health initiatives generally, while at the same time maintaining privacy and confidentiality; and
- consumers, providers, healthcare organisations and governments have access to data that enable measurement of quality of care and health outcomes to inform treatment choices and policy development.



Part Two – Achieving National Collaboration

National collaboration is built on the need for a coherent and consistent approach to the development of information activities, customer services and the use of information technologies. Collaboration also involves partnership with a number of key stakeholders. In particular, the level of participation and ownership will be threatened without the specific involvement of:

- health consumers and consumer organisations;
- organisations (both government and non-government) with an interest in privacy matters;
- the different tiers of government (the Commonwealth, states and territories and local government);
- professional health organisations; and
- the information industry.

2.1 The National Health Information Management Advisory Council

Australian governments are committed to mechanisms that will facilitate collaboration between the Commonwealth, states and territories and other key stakeholders in the development, uptake and implementation of new online technologies in the health sector. Principle among these mechanisms is the

establishment of the National Health Information Management Advisory Council (NHIMAC).

Context

As outlined earlier in Part 1 of *Health Online*, a collaborative, national approach is needed if we are to maximise the potential of emerging information technologies to transform information management in the health sector.

Objectives

1. To provide a nationally coordinated approach to improving health information management through the greater uptake of online technologies.
2. To increase necessary synergies among jurisdictions and reduce unnecessary duplication of effort.
3. To establish and maintain strong linkages between existing and newly created health information management and information technology forums.

Progress to date

In July 1998, Health Ministers agreed to the establishment of the National Health Information Management Advisory Council as the national peak body for progressing key issues relating to the use of information technology.



The Council, which brings together consumers, government and representatives from the private health sector and industry, will:

- advise Health Ministers on options to promote a nationally uniform approach to more effective information management within the health sector;
- promote the efficient and effective use of information technology in health;
- develop a partnership with the private health and information technology sectors;
- encourage the development of a market for Australian health information technology and services; and
- protect the public interest – particularly in relationship to privacy.

There are already a number of national structures in place to deal with health information issues, including the National Health Information Management Group and its sub-groups. The role of the Council will not duplicate such ongoing work. Rather, it will have a more overarching role, ensuring that strong linkages are maintained between the key players. Through its membership it will also provide linkages with other non-government peak organisations dealing with information management and information technology issues across the health sector such as the General Practice Computing Group and the General Practice Partnerships Advisory Council. It is responsible for bringing greater coherence to activities in information management and the use of information technologies. It is also expected to take the initiative to remove 'road blocks' to development in key areas. Figure 2.1.1 provides a schematic representation of

how the major national structures interrelate.

The Council will provide advice to Australian Health Ministers on policy matters that are crucial to the development of online activities in the health sector – this action plan and matters concerning data protection are high priorities.

Proposed actions

Council to oversee the development and implementation of *Health Online: A Health Information Action Plan for Australia*.

Timetable

Council to make recommendations to Health Ministers on adoption of *Health Online* – by July 1999.

Responsibility

Commonwealth to initiate.
Commonwealth, states and territories to participate.



2.2 Future work

The vision which informs the NHIMAC initiative is of an innovative Australian health system which is making efficient and appropriate use of new information management tools through a distributed network of action, guided by clear objectives, priorities and national strategies.

NHIMAC will continue to elaborate priorities and activities within a living action plan. In particular, attention will be directed to:

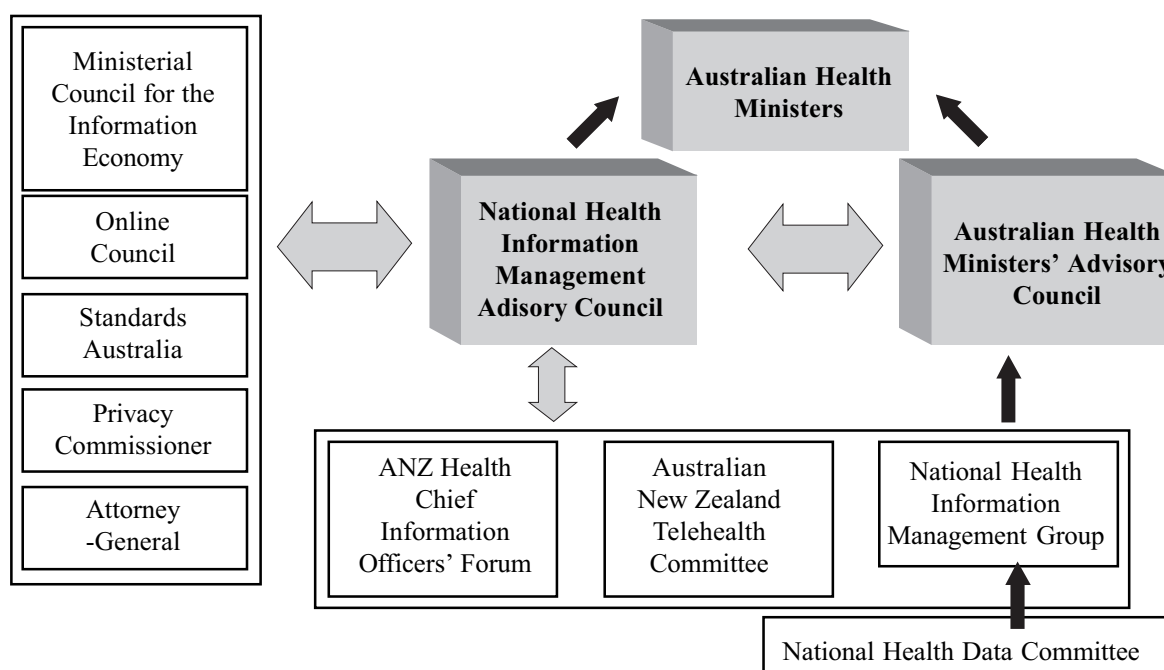
- the policy and regulatory framework that allows better information management in health;
- clarifying responsibilities and coordination of activities;

- identifying incentive systems necessary to support change;
- developing and communicating information and training in support of change;
- encouraging others in the system to connect their own action plans to the national plan; and
- monitoring and evaluating progress in implementation of the plan.

In the first instance, NHIMAC will:

- develop a communication strategy – by 2000. Plan to include a version of *Health Online* that is publicly accessible as a part of the communication strategy. Also consider the possibility of a national convention on health information;
- develop a change management strategy, acknowledging issues of culture change in the work force as well as in the general community; and
- develop a monitoring strategy that involves the NHIMAC Secretariat and includes the development of performance indicators and reporting arrangements.

Diagram 2.1.1 National Health Information Management Advisory Council – inter-relationships with other national structures having a major role in progressing health information management and information technology issues





Part Three – Laying Sound Foundations

For the initiatives outlined in this *Health Online* to proceed, there are some key fundamental issues that need to be addressed at the early outset. This section identifies those building blocks that must be put in place to underpin all of the activity contained in later sections. They include:

- privacy, security and legal issues that concern the electronic transfer of health information;
- the development of national standards with international compatibility for health information management and information technology;
- infrastructure issues required to progress online activities in health;
- training and support for health workers and consumers; and
- research and development.

3.1 Develop the necessary legal, data protection and security frameworks necessary to facilitate electronic transfers of health information

Introduction

Crucial to the success or otherwise of initiatives aimed at greater sharing of

personal health information by electronic data exchange is the degree to which individual consumers' privacy is protected and is perceived to be protected. New systems of handling personal health information need to recognise that trust in the privacy and confidentiality of the sensitive information that patients share with their practitioner is fundamental to receiving appropriate care.

Consumers are likely to expect that such information is collected, stored, communicated and analysed on a need-to-know basis only, that they have the opportunity to refuse permission for such information to be transferred to a third party and that their personal health information is held securely at all times. The issue of access to their own health care records is also of critical concern to consumers, and one which needs to be addressed within the context of measures aimed at protecting personal health information.

With increasing recognition of the individual and public benefits that can be gained through greater access to de-identified and aggregated clinical data for policy, planning and research purposes, has come acceptance that strict protocols and protective measures need to be in place to ensure that such activities can be agreed and undertaken in an environment of public trust. This points to the



importance of a statutory framework to replace the current common law basis of patient/clinician relations. The legitimate privacy requirements of providers also need to be considered in this context. As raised by the *Breen v Williams* judgement, issues of ownership and copyright of health data will also need to be addressed.

Electronic data transfer across the health sector also raises questions, not only about authorised access, but also about the certainty that such data is sent only to whom it is intended. Certification and registration for the purposes of electronic identification and authentication are crucial in this context.

The introduction of the Federal Government's *Electronic Transactions Bill 1999* and corresponding state and territory legislation is a crucial element in the development of an online environment. The Bill places electronic transactions on an equivalent footing with paper transactions and paves the way for health care to operate in the paperless environment. The Bill also provides the context for the supporting work on security and authentication as well as electronic requesting and service delivery.

3.1.1 Privacy/data protection

Context

The community currently has a high level of trust in the way hospitals and doctors maintain the confidentiality of their health information. However, the opportunities to collect, use and exchange information both internally and externally to an organisation now offered by emerging

technologies have led to heightened concerns about whether and to what extent the confidentiality of personal information will be respected and preserved in the future. This is particularly an issue in the health sector, where people are often at their most vulnerable and powerless, where information is often particularly sensitive and personal, and where inappropriate disclosure and use of personal information can have a devastating effect on people's lives and circumstances.

Therefore, if health consumers are to be convinced of the benefits that the greater capture and use of personal information can bring to individuals and the general population, they will need to be assured that the privacy of their own health information is adequately protected. There is a risk that if consumers do not have confidence in the way their personal health information is handled, they may well oppose the implementation of new measures or refuse to give information to clinicians.

Expectations of an appropriate level of privacy notwithstanding, health consumers also need to be confident that they are obtaining quality health care, and that health resources are distributed efficiently and equitably. In the health system, a fundamental and recurring ethical dilemma arises when there is tension between an individual's right to privacy and the public or general benefit. Stated succinctly, "The ethical problem is to maintain the paramount welfare of the individual while continually exploring new ideas which may improve that welfare."³

3 MJ Baikie, (1984) *Ethics and Confidentiality*, Transactions of the Menzies Foundation, Volume 7, pages 159-162.



To ensure an ethical approach to information use and management, consideration must be given to the constraints imposed by the legal duty of privacy and confidentiality and the provisions of privacy legislation, and the public interest in the privacy of personal information and the legitimate public health use of information.

Decisions about ethical impact will often need to be made on a case by case basis. The four basic principles which provide the foundation for ethical decision-making in health are:

- beneficence – the intent to ‘do good’ for the individuals involved, either directly, or indirectly by expanding knowledge;
- non-maleficence – the prevention of harm;
- justice – the balance of the public interest, or general welfare, with the interest of the individual; and
- autonomy – the capacity of individuals to make decisions about their own lives and the right to exercise this capacity.

The above principles are consistent with and are complemented by the *National Principles for the Fair Handling of Personal Information* — a widely accepted structure for the management of personal information that is consistent with consumer expectations.

There has been a growing realisation that Australia’s approach to health information privacy and the ethical use of such information should be strengthened, to respond to current demands for data sharing and to plan for the increasingly complex issues that are emerging as advances in technology open up new possibilities for using information.

Governments, industry and many health service providers are increasingly keen to see national arrangements established to provide a nationally consistent approach across jurisdictions, and to begin to address future needs. The Commonwealth Government’s decision to proceed with ‘light-touch’ legislation (*Privacy Amendment (Private Sector) Bill 1999*) for the private sector based on the *National Principles for the Fair Handling of Personal Information* will be important here.

Any attempt to develop a nationally consistent approach to privacy issues also needs to manage the key information issues which are confronting the health sector today. They concern: electronic linking of data to provide better coordinated care (see section 5.1.1); and electronic linking of data for better policy and planning (see section 6.2.1). These initiatives can only successfully proceed within an environment in which consumers can be confident that their privacy is protected and where they can understand and maintain a reasonable level of control over how their personal health information is handled.

Objectives

The objectives in this area involve:

1. Development of nationally consistent data protection legislation that covers personal health information.
2. Introducing additional measures (if necessary) to allow initiatives to proceed in a robust privacy framework in the area of communicating information for better coordinated care and in linking data for better policy and planning.



Progress to date

Commonwealth Government has decided to develop 'light-touch' data protection legislation for the private sector, based on the *National Principles for the Fair Handling of Personal Information*.

The Privacy Commissioner has undertaken a consultation process in May/June 1999 to consider what additions and/or modifications to the *National Principles* are needed if they are to provide appropriate coverage for health information, whether held by health care providers, or other organisations, under the proposed 'light-touch' private sector privacy legislation.

Following this consultation process, the Privacy Commissioner has made recommendations to the Attorney-General on how the *National Principles* can be applied to personal health information in a sensible and workable way, with appropriate modifications.

Proposed actions

The Privacy Commissioner may also consider developing guidelines for the handling of personal health information to assist people to meet their obligations under the new legislative standards.

The Department of Health and Aged Care is also continuing to consult with states and territories concerning ways of achieving a nationally consistent approach to privacy protection across both public (Commonwealth, state and territory) and private sectors. These discussions will also examine what additional legislative approaches may be required within the context of electronic data exchange for better coordinated care

(section 5.1.1) and data linking for better policy and planning (section 6.2.1).

If new policies for health information management emerge, the Attorney-General's Department and the Privacy Commissioner would work together with the Department of Health and Aged Care to develop any additional legislative proposals to ensure public confidence in the level of protection accorded to sensitive health information.

Timetable

1. Introduction of the *Privacy Amendment (Private Sector) Bill 1999* — December 1999.

Responsibility

Commonwealth Department of Health and Aged Care and the Attorney-General's Department, in consultation with the Privacy Commissioner.

3.1.2 Security and authentication

Context

Health sector communications generally involve the transfer of highly personal and sensitive information. Moving to an electronic environment for these communications therefore demands a high degree of confidence that the information will be transferred securely and that the identity of the parties is not in dispute. These are attributes not readily associated with the internet at the present time.

Solutions to these problems do exist and can be designed with the scale of the



health sector in mind. These solutions are based upon public and private key technology with a trusted overarching infrastructure that provides users with confidence in the security and authentication of communications.

The potential business benefits and opportunities for the health sector as a whole in a coordinated implementation of public key technology need to be assessed. The Government's Public Key Authority (GPKA) Gatekeeper project outlines the requirements for such an infrastructure. The Health Insurance Commission (HIC) is the health sector representative on the GPKA.

The development of a public key infrastructure based on the GPKA model raises important issues for the health sector.

These issues include:

- whether the health sector and/or the HIC should endorse and mandate the Gatekeeper framework and recommendations;
- definition of the role in the health sector in public key technology implementation of a registration authority and/or a certification authority;
- whether the approach of a whole of health registration authority is consistent with a whole of government use of public key technology;
- determine the impacts of providing digital certificates as part of provider registration;
- identify potential impact of public key technology in future business functions including impact on access to internet services and paperless transactions;
- define the proof of identity requirements for electronic communications in the health sector; and
- determine technology requirements and costs.

To gain insight into the above issues, the HIC has initiated the Public Key Infrastructure Project.

Public Key Infrastructure Project

The HIC registers health care providers under the Medicare and Pharmaceutical Benefits Schemes. This process is closely related to the role of a registration agent under the public key authority framework. The identification of individual health care providers is seen as a critical step towards achieving paperless transactions.

Objectives

The HIC's Public Key Infrastructure Project was initiated under the GPKA framework to:

- deliver a public key infrastructure to enable secure, acceptable communication within the health sector;
- establish a registration authority for the purposes of supporting current and future HIC electronic business;
- introduce the technology to enable authentication, integrity, confidentiality and non-repudiation of health information transmitted across the health sector;
- introduce a Certification Authority and a Registration Authority with roles and responsibilities acceptable to the health sector;



- gain experience in the policies and procedures required to operate a registration authority;
- provide a foundation to support paperless business within the health sector; and
- obtain feedback and guidance from health sector professionals in the use of digital certificates.

Progress to date

The project requires collaboration between government, the health sector, and industry. HIC is participating on the Government Public Key Authority (GPKA) Board, and is responding to the requirements of Commonwealth policy and electronic transactions bill legislation.

Collaboration across the health sector with Commonwealth, state and territory health departments, peak health care professional groups, private health insurance, and health care consumer groups is focussed on engendering understanding of electronic transactions and the underpinning public key infrastructure.

The development of a public key infrastructure and its take up by the health sector is dependent to a very large extent on the understanding and support provided by the Information Technology and Telecommunications (IT&T) industry.

The HIC has identified the need for three broad types of public key certificates for the initial phase of infrastructure development. These are:

- health care location certificate;
- health care provider identity certificate; and
- an organisational identity certificate.

Certificate policy development covers consideration of the following: certificate purpose, certificate scope, limitations on use, certificate content and layout, proof of identity requirements, certificate issue and revocation policies, registration authority processes, end user agreements and cryptographic tool selection and distribution.

Further, as the needs of the sector for public key certificates become more accurately understood, other certificate types may emerge.

The introduction of public key technology and certificate services into the health sector will lead to the development of new ways of communicating and managing personal health information. A number of professional practice issues will emerge for which advice and guidance will be required from health care professional groups. The aim of these consultations will be to provide guidance on the preferred manner of use of public key technology in order to reduce liability.

Smart cards and smart card readers are being investigated to enhance the security of health care communications. Health care professionals would hold the smart cards. The cards would contain a private key and digital authentication certificate.

The private key and digital authentication certificate would be used to create a digital signature on electronic documents, authenticating the sender and ensuring data integrity. The public key technology would also be used to encrypt personal health information to ensure the confidentiality of health care information transferred between health care settings.



Proposed actions

The public key technology and supporting infrastructure represents an emerging capability enabling the health sector to improve communications. There will be a range of opportunities presented regarding the rollout of the infrastructure to different segments and uses within the health sector. The rollout strategy will need to take into consideration the HIC's history with various professional groups as well as the priorities for conversion of existing operations from the existing security system to a public key technology-based security system. Equally, there will be growing interest to introduce new initiatives and to assist initiatives within states and territories.

The GPKA framework elaborates a number of distinct roles, including Certificate Authority, Registration Authority and vendor of accredited cryptographic tools. The HIC has a number of streams of work identified to build a public key infrastructure in support of its core business requirements and broader use by the health sector. The main elements of this work include:

- selection of an initial Certificate Authority;
- determine the impact on current registration activities arising from the HIC as RA in the health sector;
- development of the Registration Authority role for the health care provider identity and health care location certificates;
- development of legal agreements for the CA/RA relationship and for End Users for each certificate type;
- the selection and integration of an initial suite of cryptographic tools for health care providers and vendors of software for use in the health sector;
- the acquisition of cryptographic tools to support the Registration Authority role;
- the selection of security tokens for the safe transport and storage of public keys;
- the development of strategies for the distribution of cryptographic tools associated with each certificate type;
- the development of directories of certificates and certificate revocation lists; and
- the development of a public key demonstration centre.

Timetable

Certificate issue will commence in the second quarter of 2000, limited to particular business applications.

Responsibility

The Health Insurance Commission has responsibility for the Public Key Infrastructure Project and is consulting widely in the sector and with the peak body GPKA.

3.1.3 National provider directory services

Context

In the context of an increasing need to collect and share information across health settings, the provision of directory services covering all health care providers has been identified as essential to establishing the foundation for better communications in the health sector.



Every organisation in health care maintains some form of provider directory. A number of organisations have attempted to develop regional provider directories. Some of these projects have been assisted financially by Commonwealth and state governments. While these initiatives will meet many local needs, they do not meet the needs of the health system for communications across the boundaries of health care.

More importantly, the directory services initiatives are running up against the same difficulties. The tasks of ensuring adequate coverage, accuracy of data, and timeliness of updating as well as integration with emerging electronic initiatives are proving to be major obstacles to longer-term success. There is a growing recognition and acknowledgment that a collaborative strategy needs to be developed.

While there is also a growing appreciation of the value of the Medicare Provider File and supporting administrative arrangements, it needs to be acknowledged that it does not include providers in the public sector who do not bill MBS or PBS or providers such as nurses and allied health professionals.

Equally, there is a need to be able to identify the various locations recognised as providing health services or being involved in the overall management of the Australian health care system. However it is not likely to be a trivial task to document all the public sector providers, both practitioners and establishments. The AIHW, through the National Health Data Committee's Organisational Units Working Party, is progressing some of these definitional issues.

Satisfactory resolution of this issue is likely to involve a wide range of health service providers utilising a common standard to ensure seamless communication between various providers — a common solution for the health sector is essential.

Objectives

1. Gain agreement to a national approach to health care provider and health care location directory services.
2. Develop a plan to deliver health care provider and location directory services.

Progress to date

The Medicare Provider File has been in existence for many years. State-based registration boards are active partners with the Health Insurance Commission (HIC) in maintaining the quality of the health care provider information. Health care providers also have a strong incentive to keep the information accurate and up to date. Their Medicare and Pharmaceutical Benefits Scheme payments depend on this information. As a result a significant number of amendments to the Medicare Provider File are processed each day.

The HIC also maintains directory information on a substantial number of health care locations. The information is collected through its support for regulatory functions and the management of the encryption facilities used to support the transfer of claims information to the HIC.

Medicare Provider File information is made available to over 200 authorities by the HIC. Private health insurance funds as



well as the Department of Veterans' Affairs are among the recipients. State government health departments and regional health authorities do not have access to the Medicare Provider File. Individual health care providers and their organisations, such as divisions of general practice and medical colleges, also do not have access to the Medicare Provider File. The release of provider information is made under the authority of and consistent with the various pieces of legislation covering the Medicare Provider File.

Proposed actions

There are a number of different ways in which national health care provider and location directory services could be established. Clearly one way would be to use the existing Medicare Provider File as a base. There are a number of privacy constraints on the wider disclosure of the information contained in the Medicare Provider File. The HIC will continue to explore avenues for sharing the Medicare Provider File information with a view to improving communications in the health sector.

An alternate and potentially better long-term approach would be to build the base elements of national health care provider and location directory services through the introduction of public key technology. In order for the HIC to meet the government's online agenda, the HIC will register health care providers and health care locations for the issue of public key certificates. These certificates and supporting infrastructure will be used to replace the existing secure communications facilities supporting the transfer of claims information. The registration process can provide the

vehicle to progress the collection, maintenance and disclosure of health care provider and location contact information. The HIC will explore this avenue of development with relevant stakeholders through the design and development of a public key infrastructure for the health sector.

Timetable

2000

Responsibility

Health Insurance Commission, states and territories.

3.1.4 Patient identification

Context

At present individual health consumers are identified by name, address and date of birth when their health records are forwarded to another health provider. This works well enough but is not always reliable. In an age of electronic transfer of information (in areas like coordinated care, for example), there will be an even greater need to be precise about the identity of individuals. There is a potential for serious misadventure and adverse patient outcomes if transfer of clinical information such as prescription data or medical history is not accompanied by a foolproof system of patient identification. Over recent years the increasing need to electronically transfer individual clinical information in a reliable manner has become the major driver for the establishment of a personal health identifier.

A personal health identifier will also be important when bringing information



together from many individual records to create de-identified data for research and policy development. It is crucial to be able to do this to be able to determine what programs work and where the community should be spending its health resources. Bringing information together in this way is similar to aggregating the many individual records that go to make up the census data collected every few years.

The use of a personal health identifier is a sensitive issue that has been addressed by the Privacy Commissioner in the *National Principles for the Fair Handling of Personal Information*. Within this framework, strict guidelines would need to be agreed (in legislation) before a patient identification system could be implemented. The extent to which health consumers will agree to the use of a health identifier will depend critically upon their understanding of, and trust in, its use. If this trust and understanding is not earned, health consumers may require unnecessarily restrictive use of the identifier and control of information exchange. With this in mind, further work on the use of a personal health identifier should be guided by the following:

- a health identifier should be created primarily for patient safety and quality reasons, allowing certainty of identification and transfer of information with patient consent;
- a health identifier should be fully transparent and reside in the hands of the health consumer; and
- the introduction of a health identifier should be seen as a way of setting boundaries and use of information — that is, it is as much about privacy as it is about information.

Objectives

Gain agreement to the establishment of a system of patient identification.

Progress to date

The Medicare card number is currently used for collecting administrative data about consumers who access the health care system — for the purposes of making Medicare payments. While the Medicare card number itself is not a unique number because a person can appear on more than one card, the Health Insurance Commission holds a unique Personal Identification Number (PIN) for each individual enrolled in the Medicare system. Some states and territories have already adopted their own unique identifiers — the Northern Territory, for example.

Proposed actions

1. Refer the issue of patient identification to the proposed Electronic Health Records Taskforce (see section 5.1.1) and request that the Taskforce develop options for Health Ministers.
2. Progress the privacy issues associated with the use of a personal health identifier in the context of the broader action on privacy matters (see section 3.1).
3. Review state and territory activity in the area of patient identification.

Timetable

1999/2000

Responsibility

Commonwealth Department of Health and Aged Care



3.1.5 Future work

Data ownership

Issues concerning data ownership need to be addressed at the national level. Currently, medical records held in the private sector are only bound by common law and there is no obligation for the holder of the medical record to make that record available to a patient.⁴ While ownership of records is a contentious issue, an equally relevant concern is the use of health data for commercial purposes and as a source of income for health providers. Not only is this a major privacy issue, the commercial aspects are a major impediment to inter-sectoral cooperation in health informatics. This is a very important issue which could be referred to the National Health Information Management Advisory Council at a future time.

Longer-term storage of electronic data

The longer-term storage of electronic transactions is fundamental to the effective operation of Commonwealth and state/territory programs in the online environment. Without an effective strategy in this area, the Commonwealth and state/territory governments are unlikely to be in a position to prosecute for fraud where electronic transactions are the basis of the claim.

3.2 Develop national standards for health information management and information technology that are compatible with international standards activity

3.2.1 Develop standards for information management activities using information technology systems

Context

Standards are required if information generated in one system is to be capable of being understood and managed in another. Standards requirements for health information range from a need to agree on formats for relatively simple messaging, to agreements on technical architecture, medical records systems architecture and the precise meaning of information being delivered in more complex systems. These standards are the rules that enable people to communicate – to be able to do business electronically, and to be able to gather and share information across a network.

Standards are also required within computer systems to allow one computer application to operate within another application. Data standards are required if information captured in the course of delivering health services is to be useful for evaluation, planning and research

⁴ Senate Community Affairs References Committee, *Access to Medical Records*, Report to Parliament, Commonwealth of Australia, Canberra, June 1997.



purposes — a great deal has already been achieved in the area of data standards by the National Health Information Management Group and the National Health Data Committee. Technical standards relating to the capture, transmission and interpretation of data are also essential for the safe use of electronic imaging and other technologies in telehealth applications.

If the development of an electronic platform in health is to be responsive to local needs, it is essential that open, standards based infrastructure and applications gradually replace the proprietary information technology systems that exist today.

Without agreed standards, health information management would break down into smaller networks, isolating state or territory jurisdictions, individual organisations such as hospitals, or even individual health providers (general practitioners). Standards are needed to underpin the operation of key elements of information management activities in the health sector, including electronic business transactions and the development of a national system of electronic health records (as described in sections 5.1.1 and 6.2.1). It is crucial to gain agreement on standards in these areas from all key stakeholders and for the agreed standards to be congruent with international developments.

Standards for information management using online technologies must be driven by initiatives that meet the needs of health consumers and health care professionals, but they also need to be created in the larger context of service and system planning and systems constraints.

Standards will underpin many of the action areas outlined in this action plan. The nature and the detail of standards that will be required will be dependent on the scope of those projects. It is also true that online health transactions do not operate in isolation from other sectors that have also embraced online technologies. In some areas of health, such as e-commerce, it may be possible to use generic standards rather than developing health specific ones. In other instances, such as security and image transmission, existing standards developed for other industry requirements may need modification for safe application within health settings.

Conceptually, it is useful to split standards into the following two categories:

1. Data (definitional and related) standards; and
2. Information technology standards.

Objectives

1. Develop standards (or agree on existing standards) that will underpin the development of e-commerce in the health sector and in particular:
 - 1.1 Agree standards for clinical product numbering in health supply chain management.
 - 1.2 Establish standards for electronic ordering/stock management, dispensing and payment that can be aligned to health records within clinical information systems.
 - 1.3 Establish standards for electronic claims management.
2. Develop standards that underpin the development of a national framework for electronic health record systems (note that objectives and proposed actions that relate to the actual



clinical, administrative and ethical/legal make-up of a system of electronic health records are covered under section 5.1.1). In particular:

- 2.1 Using the National Health Data Dictionary as a starting point, further develop a data dictionary that will be used in relation to a national electronic health record system(s).
- 2.2 Identify gaps and develop appropriate termsets, classification and coding systems for electronic health records
- 2.3 Develop a thesaurus for an electronic health record.
- 2.4 Develop messaging standards for communications beyond those identified under e-commerce including those required for internal computer systems operations within an open standard based system.
3. Develop additional standards required for telehealth services within an overall standards framework (ie using generic health or other industry standards except where they are inappropriate or incomplete).
4. Develop additional standards required for general practice within an overall standards framework (as above).
5. Develop standards for pharmaceuticals.
6. Support additional standards development for other sectors such as nursing, as the need is identified.
7. Test the implementation of standards, to ensure their feasibility, comprehensiveness and usefulness, as a precursor to national release.

8. Ensure that standards developed or adopted in Australia are compatible with international developments.
9. Develop standards required for knowledge base creation and use in decision-support.
10. Develop standards for security, intellectual property rights and ethics in the management of health information.

Progress to date

A standards workshop, which brought together a number of the key stakeholders (to attempt a first cut of priority setting for standards activity), was held by the Department of Health and Aged Care in August 1998. The report of the workshop identifies key action items for further work⁵ – being concerned with e-commerce, billing and finance, electronic health records and messaging, aggregation of data and data feedback for decision-support and privacy. The findings of the workshop form a basis for understanding the standards issues that need to be addressed. The report has also been widely circulated for comment, with responses expected to further refine priorities for action.

Standards development that is necessary for telehealth services and the greater take-up of online technology by general practitioners has been identified in other forums – notably in the report of the National Telehealth Committee of the Australian Health Ministers' Advisory Council⁶ and the General Practice Strategy Review Group report⁷ on general practice. There is significant overlap in issues identified in these areas and work associated with messaging, electronic

⁵ Department of Health and Aged Care, *Report of the National Health IT Standards Workshop, 5-6 August 1998*, Canberra, 1998.

⁶ National Telehealth Committee, *Report to the Australian Health Ministers' Advisory Council (AHMAC)*, January 1998.

⁷ General Practice Strategy Review Group, *General Practice: Changing the Future through Partnerships*, AusInfo, Canberra, March 1998.



health records and privacy. However, there are specific standards work required for particular areas such as telehealth and general practice.

Proposed actions

1. General

- 1.1 Develop a formal response to the submissions to the standards workshop. Provide guidance to IT/14 and other players on a co-ordinated approach to standards development and implementation.
- 1.2 Examine the possibility of a high level working group on data standards. This should be considered in light of the proposed actions (section 3.2.2) for a group to be established for the purpose of endorsing standards.

2. E-commerce

- 2.1 Develop a process (in association with the Project on Electronic Commerce and Communication) to agree on an electronic catalogue and a standard for product identification (possibly to be based on the EAN or European Article Numbering system).
- 2.2 Establish a process to develop agreed arrangements for messaging – based on harmonisation of UN/Edifact and HL7.
- 2.3 Adopt additional messaging standards for patient billing, claim and eligibility checking.

3. Electronic health records

- 3.1 Conduct a data workshop to examine the range of issues associated with managing continuity between health records, service delivery data, and data aggregation for multiple purposes.

- 3.2 Establish a feasibility study for a clinical thesaurus.

4. Telehealth

- 4.1 Develop standards in imaging and video-conferencing, in collaboration with the Australian Communications Industry Forum, the Australian New Zealand Telehealth Committee, Standards Australia and the General Practice Computing Group.

5. General practice (see also section 3.7.2)

- 5.1 Develop a standard general practice based data set.
- 5.2 Convene a coding jury.
- 5.3 Identify a standard clinical classification code for general practice and investigate the possibility of a national licence.

6. Pharmacy

- 6.1 Coding standard for pharmaceuticals.
- 6.2 Standards for electronic transmission of scripts.
- 6.3 Standards/system for aggregation of de-identified prescribing data from general practice and pharmacy.
- 6.4 Standards for electronic decision support in prescribing.

7. International compatibility

- 7.1 Support Standards Australia to send appropriate Australian delegates to key standards meetings, especially HL7, UN/Edifact meetings and (potentially) CEN 251.
- 7.2 Support Standards Australia to chair ISO TC215.
- 7.3 Support widespread discussion through workshops and other activity of specific issues under consideration by ISO TC251.



At present, through workshops and other activity, these issues include health record architectures, modelling, terminology, and security.

Timetable

Ongoing

Responsibility

Commonwealth Department of Health and Aged Care, Standards Australia and other agencies with an interest in standards development.

3.2.2 Establish a process for endorsing standards on a national basis

Context

Some standards emerge because of the market dominance exerted by a single product – the use of the Windows operating environment for IBM computers for example. Other standards are made mandatory by governments (and enshrined in legislation) because a clear public interest issue is at stake to the extent that it becomes a public imperative to act. The kind of standards that have been described above (section 3.2.1) as being essential for the development of significant information management activities in the health sector, such as the growth of e-commerce, fall between the likelihood that market forces will deliver the right outcome and the need for public intervention. If the market were left to sort these matters out, a set of standards in all probability would emerge. The assistance that has been provided by government in the form of standards

workshops etc can also speed this process but the cost in delays and 'false starts' could still be substantial. A strategy for endorsing, though not necessarily mandating, the standards that are agreed by stakeholders would achieve a working partnership of the market driven and government intervention approaches. This would require agreement about what standards need to be endorsed at a national level and input from key stakeholders to achieve wide support for the standards that are recommended for such endorsement.

Objective

1. Establish a process for endorsing standards for adoption on a national basis in the health sector.

Progress to date

Progress has been made in a number of areas where agreement about standards needs to be achieved. In the area of e-commerce, for example, state and Commonwealth discussions have led to strong support and 'in principle' agreement to adopting the European Article Numbering (EAN) as a standard. While much work has been undertaken by the National Health Information Management Group and the National Health Data Committee over the last six years in developing and endorsing data and definitions standards a process for the endorsement of other such standards for the health sector, however, is less clear. The report of the National Telehealth Committee of the Australian Health Ministers' Advisory Council (AHMAC)⁸, for example, has investigated issues associated with telehealth imaging and other standards but it doesn't express a view about where authority should lie

8 National Telehealth Committee, *Report to the Australian Health Ministers' Advisory Council (AHMAC)*, January 1998.



to ultimately endorse those standards. It also acknowledges the difficulty of gaining consensus in relation to standards. The number and nature of standards that will require endorsement would preclude AHMAC from taking on this role. The process for endorsing new versions of the National Health Data Dictionary through the NHIMG provides a possible model.

Proposed actions

National Health Information Management Group (NHIMG) to develop options for an existing or new body to be assigned responsibility for identifying standards that need national endorsement and the authority for endorsing the standards that are referred to it for this purpose. The nature of the endorsing body would need to be broadly based, including public and private sector interests. Its relationship with the Standards Australia IT/14 Health Informatics Committee would also need to be considered. Currently, the membership of the IT/14 does not include all states and territories. One option would be to consider expanding its membership accordingly to take on the role proposed. Membership may also need to include representation on privacy issues (the Privacy Commissioner or Attorney-General's Department as appropriate). A paper on this matter to be developed by a working group comprised of members from NHIMG and IT/14 for the National Health Information Management Advisory Council (NHIMAC).

Responsibility

NHIMG and IT/14 to establish a joint working group to consult with key stakeholders, including Commonwealth and state health departments, the Health

Insurance Commission, the National Office for the Information Economy, consumer and private sector representatives.

Timetable

Paper to be prepared for NHIMAC by 2000.

3.3 Advance the growth of infrastructure needed to increase access to online health services

3.3.1 Increase the affordability of and access to telecommunications services in rural and remote Australia

Context

Telecommunications infrastructure issues in the health sector are similar to the issues experienced in other areas – such as education. The main concerns relate to the inequality in metropolitan and rural services, in terms of the availability of services, cost and quality. Rural areas have higher charges associated with access to internet services because of a lack of local call access to Internet Service Providers (ISPs), fewer points of presence and pricing arrangements of ISPs. Also, people in remote areas do not have access to telecommunications services of comparable quality.

In addition to these issues that health shares with other rural users, the health sector has specific requirements that arise,



for example, from the important role that video-conferencing can play in remote service delivery (requiring access to a 2x64Kbps service) – and the demands of imaging technology which needs the capacity to process and transmit high resolution digitised images. For the remote delivery of health services, there also needs to be a higher level of reliability than might be the case for other industries.

While having much in common with other sectors seeking to extend access to telecommunications services in rural and remote areas, the health sector has not developed the same level of coordination that other areas have created. The ANZ Telehealth Committee (a committee of the Australian Health Ministers' Advisory Council) has undertaken some work in this area but the education sector, for example, has for some time maintained a Commonwealth/state approach to this, among other issues, through Education Network Australia (EdNA).

Objective

1. Ensure that affordable access to quality telecommunications services is available for the health sector and consumers in rural and remote Australia.

Progress to date

Because issues of access and cost are not confined to health, pressure for action in this area has come from a broad range of interests. Accordingly, the Commonwealth Government intends to include a requirement for the provision of 64 Kbps ISDN services to at least 96 per cent of Australia in its Universal Service Obligations to be met by Australian telecommunications carriers. The cost-

effectiveness of satellite communications needs to be more closely considered as an alternative to laying out ISDN cable lines across vast expanses such as in the Northern Territory. A comparable service, using satellite technology is envisaged for those areas not able to obtain ISDN services. The government's Regional Telecommunications Infrastructure Fund (Networking the Nation) is also aimed at improving infrastructure arrangements in rural Australia.

The states and territories have also made rural access issues a priority. Some states are aiming to use resources from the National Health Development Fund for extension of telecommunications infrastructure – and have also collaborated on a whole of government (ie statewide) basis rather than within specific industry sectors.

Proposed actions

Multipurpose Services are a cost-effective means of providing a range of health, aged care and community services in rural communities. Multipurpose Services established under the Rural Multipurpose Health and Family Services Network will receive funding to provide them with an information technology infrastructure. This will allow services to link together and give them access to telehealth and teaching hospitals to foster better practice.

In addition, develop a health sector approach to access and affordability issues for rural and remote Australia. Engage consumer groups in rural and remote areas, the Australian Telecommunications Users Group and the National Office for the Information Economy as part of this process. Develop a state by state and Commonwealth future



needs assessment and funding requirements study for submission to potential funders.

Responsibility

ANZ Telehealth Committee of the Australian Health Ministers' Advisory Council.

Commonwealth, state and territory health departments in relation to the Multipurpose Services.

Timetable

Develop a comprehensive view of the needs of the health sector and define proposed approaches to meeting needs in the form of a comprehensive state by state and Commonwealth study – 2000.

Under the Rural Multipurpose Health and Family Services Network, 30 Multipurpose Services will be established by 2002.

3.3.2 Develop a set of workable incentives and support systems and address key infrastructure and standards barriers to increase the take-up of information technology by general practitioners

Context

The General Practice Strategy Review Group has called for greater recognition by key stakeholders of the crucial role that

the enhanced uptake of information management and information technology has in improving the quality of care delivered by general practitioners⁹. Effective use of information management and information technology is one of the central factors for ensuring continuous improvement, increased efficiency and micro-economic reform.

The Commonwealth has commissioned research to look at the barriers for the wider uptake of computers for clinical purposes in general practice¹⁰. Some of the key barriers identified include concerns regarding: costs (including financial, time and effort); lack of computer skills and literacy; privacy and confidentiality; actual direct benefits to general practitioners; reliability and potential obsolescence of software and hardware; and the lack of appropriate software applications.

Following the General Practice Strategy Review, \$15 million over three years was allocated in the May 98 Budget for information management and information technology initiatives (General Practice Information Technology Program) to support the advancement of general practice information technology.

The Department of Health and Aged Care is now working in partnership with a range of stakeholders, including the medical profession, the medical software industry and other areas of the portfolio, to develop and implement a comprehensive strategy to enable the progressive adoption of appropriate information management and information technology systems. Work is in progress

⁹ General Practice Strategy Review Group, *General Practice: Changing the Future through Partnerships*, AusInfo, Canberra, March 1998.

¹⁰ AC Nielsen, *A Study into Levels of, and Attitudes Towards, Information Technology in General Practice*, Research consultancy report prepared for General Practice Branch, Department of Health and Aged Care, 1998.



to support the development of standards for disease and treatment classifications, electronic prescribing and electronic messaging between hospitals, general practitioners and other health care providers.

One of these key players is the General Practice Computing Group (GPCG) which is the peak national body for general practice computing, and the lead group in developing general practice information and information technology policy and implementation strategies. The GPCG provides the forum for the government and general practice to discuss general practice information technology, and will determine priorities, develop an implementation plan and make recommendations in regard to the General Practice Information Technology Program.

Objectives

1. Increase the uptake of information management and information technology applications in general practice by facilitating the development of the necessary standards and communications infrastructure to support future computerisation. (See also section 3.2.1)
2. Develop strategies to encourage the rapid development of modular software for electronic prescribing, clinical decision-support and communications that meet appropriate standards for general practice. (See also section 5.1.2)
3. Develop strategies to support and encourage general practitioners to invest in, and utilise, information technology systems.

Progress to date

1. The formation of partnerships between key stakeholders through the establishment of the General Practice Computing Group (GPCG) has ensured cooperation and support for implementation strategies including agreement on resource contributions and identification of priorities.
- 2 The GPCG has been established to:
 - support the GPCG Management committee and relevant working parties;
 - coordinate the development of standards and implementation of strategies;
 - establish a clearing house on general practice information management and technology issues; and
 - undertake a range of projects such as a Y2K and Crisis Recovery Project and an assessment of information technology activity in divisions of general practice, rural workforce agencies and other general practice organisations. An electronic mailing list has been established to facilitate communication on information technology issues, research and developments across the general practice sector.
3. A coding jury is currently being established in consultation with the Royal Australian College of General Practitioners (RACGP) to identify a standard code for clinical classifications for general practice.
4. Expressions of interest have been sought to develop a standard minimum data set for general practice.



5. A number of divisions of general practice are undertaking projects to develop electronic health communications networks. For example, the ACT Division of General Practice has participated in a health communications trial involving links between general practitioners, ACT Community Care, the ACT Department of Health and Community Care, hospitals and the Health Insurance Commission. This trial provided an example of an information technology network that could be built upon in the future. Other such initiatives include: the involvement of the Illawarra Division of General Practices in the development of a computerised information system (Care Net Illawarra) as part of the Illawarra Coordinated Care Trial; the Yorke Peninsula Smartcard Project; the Southern Healthcare Network Smartcard Project; the Telephone Support Consortium; and the Integrated Care Program (Hunter, Hornsby and Central Bayside Divisions of General Practice) which will connect Divisions, Health Insurance Commission and local health service providers via a secure Intranet.
6. NSW Health has developed a General Practice IM/IT Strategy to encourage general practitioners to take up relevant information management and information technology tools. It also aims to foster increased interaction between general practice and the public health system.

Through the Practice Incentive Program (PIP) funding is being identified specifically to encourage general practitioners in information management. Specific components of the PIP are targeted towards computerised prescribing to encourage general

practitioners to have a computer in the consulting room, build a computerised demographic database of patients and to encourage connectivity outside the practice.

Proposed actions

1. Provide direct financial incentives to support computerisation through the Practice Incentive Program.
2. Development of a standard general practice based data set inclusive of standard data items which are routinely collected when general practitioners care for their patients, to allow for easier transfer of information between general practitioners, hospitals and other health service providers.
3. Convene the coding jury and finalise in collaboration with the RACGP, establish an agreement on a clinical classification code suitable for general practice and explore the feasibility of a national licence, maintenance and ongoing development of a coding system.
4. Coordinate training and support for general practitioners through the GPCG secretariat and involve divisions of general practice.
5. Develop standards for system maintenance and backup of practice based systems.
6. Support the development of an electronic health record architecture consistent with the overall framework of electronic health records proposed in this action plan.
7. Explore the feasibility of electronic decision-support developments suitable for general practice.



Timetable

1. Commission development of minimum data set model by July 1999.
2. The Department of Health and Aged Care and the GPCG signed a contract to establish the Jury in May 1999 and the first meeting of the Jury was convened in June 1999. The Jury will report later in 1999.
3. Model for general practice training and support completed by June 1999.
4. Completion of standards for practice based information technology systems maintenance and back up specifications by end December 1999.
5. Development of a model for an electronic health record (general practice) within the framework recommended by the Taskforce on Electronic Health Records (section 3.1.1) – by July 2000.
6. Facilitate the development of electronic networks upon which national or state based information technology networks can be built by June 2001.

Responsibility

A partnership of the Commonwealth Department of Health and Aged Care, state and territory health authorities, Medical Software Industry Association, GPCG and other related stakeholders.

3.3.3 Future work

Incentives and support for other providers/development of a sector-wide strategy for take-up

The preceding section is limited to increasing the uptake of information technology by general practitioners. Future work should include identifying the key infrastructure and standards

barriers that exist for other providers in the health sectors and developing workable incentives to increase their uptake of information technology. This, together with the plans for general practitioners, would form the basis for a sector-wide strategy for take-up.

National purchasing arrangements

A cooperative approach to national tendering and purchasing could have many benefits — not the least being the ability to drive standards by occupying a prominent position in the market. This future work proposal involves the Commonwealth, states and the territories investigating the possibility of cooperative tendering and purchasing along the lines of Education Network Australia (EdNA).

3.4 Training and support for health care workers and consumers to encourage uptake and use of information technology

Introduction

Education and training are important issues to be addressed as part of the overall uptake of information technology. Already states and territories have recognised the importance of equipping students with information technology skills so that they can participate in the broader information economy and this will be critical in bringing about generational change. However, there are many potential users who will not have the skills or confidence to access such technologies in the foreseeable future, particularly among older people and



those living in remote communities who will have not had any prior exposure. Moreover, even for those currently working in an environment where they are using computers, there may be a need for additional training for major applications as they are introduced.

3.4.1 Provide information and training for health care workers on the practical applications of information technology

Context

The Australian health care system is moving towards a more integrated and coordinated approach to care and is placing increasing emphasis on evidence-based decision-making. The role of information technology in day to day clinical practice is becoming increasingly important for accessing and communicating health related information. Clinicians are beginning to realise that their role and the quality of the care that they provide relies upon them participating in the electronic age to ensure access and overcome communication issues for a more effective health system.

One of the major impediments, however, to accelerating the uptake of information technology in the clinical work place is a lack of support and training on the practical application of computer hardware and software applications for individual practitioners. The information technology skill base amongst many health care workers is low, and opportunities to enhance their knowledge in this area,

particularly in respect to medical software and data transfer capabilities, has been impeded by a lack of any ready support in day-to-day practice situations, as well as the lack of any relevant training opportunities. Activities that facilitate user friendliness and provide a greater understanding of how information technology systems function in the workplace can assist in encouraging health professionals not only to utilise computers in practice, but also to come to greater acceptance of information systems.

Many industry specific organisations such as divisions of general practice are moving quickly to coordinate information technology support and education for providers at a local level. They are taking a lead role in assisting health care workers with initial connection and training as well as ongoing support regarding the use of medical software applications.

Objectives

1. Identify mission critical applications which have a high pay-off to health care workers as priority targets for education and training.
2. Support the development of education and training models, which increase the use and uptake of information technology among health care workers.
3. Support the evaluation and accreditation of clinical software and disseminate the information to health care workers.

Progress to date

As part of the General Practice Information Technology Program an audit of information technology support and



training in the general practice sector has recently been commissioned. This study will assist with identifying needs in relation to grass roots support and training as well as provide guidance on future activities and support needs within this sector.

Consultation through workshops and other structures that bring consumers and health care providers together will assist with the development of priorities and ongoing support arrangements for information and training.

Proposed actions

1. Work with general practice organisations (particularly divisions of general practice and their state-based organisations) to identify mechanisms for improving the provision of locally accessible information and training for general practitioners.
2. Establish mechanisms to support rural practitioner needs in regard to information technology support and training.
3. Disseminate the results of the evaluation and accreditation of clinical software.
4. Encourage the development of online and help desk support facilities, which are accessible to health care workers.

Timetable

Establish a model for information technology training and support for general practice (including rural areas) developed by June 1999.

Information from the evaluation and accreditation of clinical software made available to practitioners by August 1999.

Online and help desk support facilities will be established as part of the GP IT Strategic Framework agreed by the Minister in June 1999 through divisions of general practice and coordinated through GPCG.

Responsibility

Department of Health and Aged Care in collaboration with the General Practice Computing Group, the medical software industry and relevant clinical colleges

3.4.2 Future Work

Consumer training needs

This could form part of the work of the Consumer Focus Collaboration, as discussed in section 4.1, and will require Commonwealth and state governments to work closely with consumer and community organisations.

Locally accessible training

Information and training for health care workers in regional and remote Australia, especially for Aboriginal and Torres Strait Islander health services will require improved provision of locally accessible information and training.

Education strategies across the health sector

With the increased exchange of information electronically across the care continuum a clear strategy for the training and education of all practitioners involved in the electronic exchange of clinical information or contributing to electronic records will be required. An initial project



could be the development of an information worker skills program. A longer-term strategy should include universities, professional colleges and clinical educators as key stakeholders in the training of health care professionals.

Informatics centre of excellence

A strategy that could be considered, to provide a focus for future training and education programs, would be to establish a centre for excellence for informatics — possibly attached to a major university (see section 3.5).

3.5 Foster research, development and best practice in the use and implementation of online technologies in the health sector

Context

A wealth of research and development is underway in the areas of health information and communications technologies across the public and the private sectors. Given the complexities of the issues in this area, research and development activities are crucial to test and prove new ideas. However, as yet there are no mechanisms to identify and prioritise the key areas for a national collaborative approach to research and development. Moreover, the insights and findings gained through the multitude of projects that have been, or are being carried out, are generally poorly disseminated, resulting in unnecessary

duplication of effort and resources, and impeded flow of best practice ideas across the sector. In the area of telehealth, substantial steps have already been taken to address this through the establishment of a national database of telehealth projects on the internet. Activities in other areas of the health sector remain fragmented and uncoordinated.

To date, most pilot projects have been undertaken to determine how specific technologies can be used. Very little work has actually been undertaken to evaluate the costs and benefits of deploying information and communications technologies in the health sector.¹¹

Objectives

1. Identify key areas for future research and development that have major national relevance.
2. Increase the dissemination and uptake of research findings and best practice in the use of information management and information technology in the health sector.

Progress to date

Among the many projects being undertaken to develop and test the use of information and communications technologies, key projects to date that have been undertaken on a national basis include:

- The nine Coordinated Care Trials being undertaken by commonwealth and state health departments are an important step in the further

¹¹ House of Representatives Standing Committee on Family and Community Affairs, *Health Online: A Report on Health Information Management and Telemedicine*, Commonwealth of Australia, Canberra, October 1997.



development of the Australian health care system. The trials include the use of information management and technology as a tool for care coordination and integration, testing different models for funding and delivery of coordinated care for people with multiple service needs. Crucial to the successful implementation and evaluation of the trials is the use of information management and technology to capture data across these care settings. Such data include client characteristics, service utilisation for both controls and trial participants, cost data (including Medicare Benefits Scheme and Pharmaceutical Benefits Scheme data), outcomes data and payments and funding pool data;

- the Royal Brisbane Hospital project (see section 5.1.1);
- the PeCC Project (Project Electronic Commerce and Communication) (see section 6.1.1);
- the Pharmacy Intranet project – a project intended to enable pharmacists around Australia to check with the Health Insurance Commission that a consumer is eligible for, and entitled to, pharmaceutical benefits before dispensing medications; and
- telehealth projects in all states and territories (see section 5.2.1).

Proposed actions

1. Develop a national approach.

- 1.1 Investigate the potential for either the National Health Information Management Advisory Council or the National Institute of Clinical Studies (currently being established) to take on a coordination role for research and development activities. The aim

would be to establish processes for: information exchange; prioritisation of key areas of research; and development of Commonwealth, state, territory and key stakeholder collaboration.

- 1.2 Establish a national Clearing House for pilot projects. Part of its role would be to provide an audit of existing local, state and national projects in detail. It could also facilitate information exchange and networking; and develop a framework for linking the various health sectors in a systemic manner. It could also provide a mechanism to publish project findings and outcomes through an internet site, documenting best practice in the area of health information and communications technologies. Through the development of an evaluation framework for projects it could assist in identifying gaps, identify opportunities for collaboration between states and territories (such as internet development and consumer health information) and enable research grants to be targeted more strategically. The evaluation methodology being developed by the Australian New Zealand Telehealth Committee may provide a model for this. Consideration could also be given to outsourcing the project to the Collaborative Health Informatics Centre (CHIC).
- 1.3 Establish a Clearing House to be overseen by the General Practice Computing Group to provide an interactive support facility for General Practice Divisions, state



based general practice organisations and other stakeholders comprising:

- a capacity to develop information resources for use nationally;
- a web site;
- list servers;
- support for Division information technology personnel for information sharing; and
- a repository for project reports, contact information and networking, lists of current activities, sources of further and related information.

1.4 Further national testing of information management and technology for coordinated care.

1.5 Investigate the possibility of an informatics centre of excellence (see also section 3.4.2).

2. Coordinated Care

2.1 Additional coordinated care initiatives for older persons are being developed by the Commonwealth. The current Coordinated Care Trials will provide a valuable model to develop the information management infrastructure for these new trials.

Timetable

- 1 Develop proposal to establish a Project Clearing House and establish Internet site – by the end of 1999
- 2 Clearing House for general practice information technology activities to be established over two years, commencing 1999.
- 3 Evaluation of the current Coordinated Care Trials is ongoing.
- 4 Investigation of informatics centre — by mid 2000.

Responsibility

Department of Health and Aged Care in conjunction with states and territories to implement coordinated care initiatives for older people. Commonwealth, states and territories to consider establishment of a national Clearing House for health informatics projects. General Practice Computing Group to establish Clearing House for general practice information technology activities. Department of Health and Aged Care and NSW Health to jointly investigate the possibility of an informatics centre of excellence.



Part Four — Empowering Consumers and Communities for Better Health

This section of *Health Online* discusses some of the initiatives being undertaken in the area of improving consumer access to health information, particularly through the use of information and communications technologies. They are intended to build on the existing network of non-government support services. While the issue of individuals access to their own personal health information is clearly important in empowering consumers, it is discussed in detail under Part 5 - Supporting Clinical Care.

4.1 Develop a national approach to improving consumer access to health information

Context

Consumers' access to information and the ability to make decisions about their own health and well-being are important rights. In addition, there is a growing body of evidence to support the argument that greater consumer participation in health care improves clinical outcomes. The provision of good information will enhance the capacity of consumers to make informed decisions about their health care and facilitate better

communication between consumers and health care providers.

The Taskforce on Quality in Australian Health Care noted that a vast amount of health information of varying quality is now produced for consumers but that many people feel under-informed about their own health care. "They are not given the right information in the right way at the right time. This contributes to dissatisfaction with care. It may also contribute to adverse events." It goes on to say "... At present, access to health information is clearly inequitable. It depends on the ability and willingness of individual health care providers to give information and on the resources available to consumers and their ability to access these resources." ¹²

Consumers have a wide variety of information needs including:

- information on health promotion and illness prevention;
- information on availability, access, quality, cost of services, rights, complaints mechanisms and access to consumer support groups for individuals and carers including information to enable consumers to participate in health service planning,

¹² Australian Health Ministers' Advisory Council, *The final report of the Taskforce on Quality in Australian Health Care*, AGPS, Canberra, June 1996.



policy development and setting priorities and addressing quality issues in the delivery of health services;

- information about medicines, conditions and treatment options, benefits, risks and alternatives including information with a focus on prevention and maintenance of well being; and
- information to enable people to live with long-term illness, pain and disability and to access sources of support, self-management of illness and associated pain and disability.

Service providers use a range of approaches and interventions to meet the needs of consumers. Similarly, consumers need a range of information in various formats to make informed decisions and actively participate in their health care. Increasingly consumer health information is being provided in a variety of formats including:

- paper based approaches including pamphlets, journals, reference material;
- audio and video presentations;
- call centres providing practical information by phone to consumers who are unable to access information in person;
- personal advice from clinical or non-clinical staff; and
- electronic information through the internet or through other electronic media. Examples of such initiatives include consumer access to medication and health information through information kiosks at many pharmacies and through other health resources available on CD-Rom (eg MIMS).

Consumers also rely heavily on information available through the popular press and through friends and family. While some of this information is useful, it

is of variable quality.

Consumer health information must also be relevant to the target audience. The literacy level and cultural background of the target audience, as well as the impact of disabilities, for example vision or hearing impairments, should be taken into account when preparing materials. With the advent of electronic media it is important to recognise that many older people, for example, may not be comfortable accessing electronic information. So, in addition to information for this target audience being provided electronically, it must also be provided in a more traditional way.

Nevertheless, emerging information and communications technologies, particularly the internet, provide valuable tools to addressing some of the current barriers to information provision for health consumers. The Commonwealth's Health*Insite* project (section 4.1.1) is expected to be important in this area.

Progress to date

In response to recommendations made in the final report of the Taskforce on Quality in Australian Healthcare in 1996, the Commonwealth has established the Consumer Focus Collaboration to promote consumer participation in the health care system. The Collaboration includes representatives of national and state/territory governments, consumers, health complaints bodies, health care, medical, nursing, midwife and hospital pharmacist organisations. One of the key goals of the Collaboration is to facilitate the provision of health information to consumers in appropriate formats.



Objective

1. To facilitate the provision of health information to consumers in appropriate formats.

Proposed actions

1. Undertake a project to conduct a stocktake of activities and models for providing consumer access to health information which are or have been used by governments, health services, health workers and consumer groups. A component of this project will be to develop core principles and key elements that underpin best practice for facilitating consumer access to consumer health information.
2. The National Health and Medical Research Council (NHMRC) is currently developing a guide to preparing information for consumers for use by working parties and organisations preparing Clinical Practice Guidelines. The intention is to assist people in preparing and producing information for consumers of health services.

Timetable

1. Completion of project and production of project report – December 1999.
2. Consultation and completion of NHMRC guidelines – August 1999.

Responsibility

Department of Health and Aged Care,
Consumer Focus Collaboration, NHMRC

4.1.1 Establish the Health *Insite* website

Context

The amount of health information available today is overwhelming for both

health professionals and consumers.

Health professionals have some benchmarks such as the reputation of the journal, credentials of the authors etc by which to guide them through the labyrinth of information sources and assist them in gauging the standard and relevance of information. However, for health consumers with little or no knowledge about a particular condition or treatment, the sheer number and variety of information sources leads to confusion and uncertainty.

Funded under the 1998–99 Federal Budget, the Health *Insite* project has been initiated by the Department of Health and Aged Care to develop an online, health consumer facility that is easy to use, and gives access to authoritative health information on issues, services and policies pertinent to the health and well-being of all Australians.

Health *Insite* is a web site that provides navigational and search options and a gateway to the following:

- health information in a lifecycle context – Life Events;
- relevant topic specific references – Topic Groups;
- a high level view of selected topics – Expert Pages; and
- basic and advanced search options within the Health *Insite* database

Content accessed through the site will have an Australian focus. Content will be sourced through leading national and international health sector organisations and agencies. Primary content suppliers will enter partnership arrangements with Health *Insite*. Ownership and copyright of content accessed through the facility remains with partnering organisations.



Only high level introductory content is owned by *HealthInsite*.

The facility is being developed by the Commonwealth Department of Health and Aged Care in cooperation with state and territory governments, and other major stakeholders in the Australian health sector. The four-year project will be developed and implemented using a phased approach.

Objectives

The objectives of the *HealthInsite* project are:

- to implement an infrastructure which is capable of delivering quality and authoritative information and services to consumers and the health sector;
- to implement a comprehensive internet presence that supports the business objectives of the health sector and improves the ability of the stakeholders to deliver services to consumers;
- to promote two-way communication among consumers and the stakeholders;
- to establish collaborative partnerships with stakeholders within the health sector; and
- to provide a consumer focused facility through which the health sector can deliver health information and services.

Progress to date

Significant progress has been made in several key areas. The visual identity – including items such as the logo, templates, presentation material as well as the ‘look and feel’ of the *HealthInsite* facility – has been developed.

A prototype has been built and this will be used to conduct focus group and

useability testing before being integrated with some sophisticated technology. There have been positive preliminary consultations with a broad cross-section of state and territory health representatives.

The Department has developed a draft model for a Content Selection Process which defines the steps involved in the development of content for and the roles and responsibilities of participants in *HealthInsite*. The Department has also embarked on a partnership development process to involve other health organisations in the development of the facility and is undertaking a topic and content selection and development process for two topics to be used in the pilot stage of the project. The pilot is currently in use to demonstrate *HealthInsite*’s potential capabilities and scope to the Department of Health and Aged Care, state, territory and other prospective partners.

Proposed actions

These include:

- initial partnering arrangements and content development process will be developed;
- feedback on the pilot service will be sought from a limited audience, including specific key people and groups;
- an in-depth focus testing and review process will be conducted;
- the evolution and building of *HealthInsite* will accelerate, functionality and content will be expanded, and partnerships and the acquisition of content (including classification, maintenance and



creation) will be developed and maintained; and

- the implementation of an agreed management model with the appointment of an interim steering committee and Editorial Board.

Timetable

There are three distinct stages in the project:

- 1 Proof of concept – July 1998 to March 1999.
- 2 Pilot Service – April 1999 to last quarter of 1999.
- 3 Production – last quarter 1999 onwards, the evolution and building process accelerates.

Responsibility

Commonwealth Department of Health and Aged Care.

4.2 Future work

Consumer access to online services

The increasing emphasis on service delivery via the internet means that access by consumers (particularly in remote areas) to internet services is becoming an important issue — not just in the health sector but across government services. The states and territories are at various stages of development of strategies to address the access issue, including the use of consumer health kiosks, use of access points in libraries and other public access mechanisms (see details in Appendix 2). The National Office for the Information Economy is also taking an interest in this issue. A project could involve a stocktake of existing provisions in the states and

territories (not limited to health) and the development of a national framework for consumer access points to government online services. Department of Health and Aged Care to consult with the National Office for the Information Economy.

Accreditation of consumer information

The importance of accurate, reliable health information for consumers is well recognised. The NHMRC guidelines (section 4.1) and *HealthInsite* projects are each designed to support the development of such material. A clear accreditation process for consumer material would be invaluable for health information providers.

Health *Insite* partnerships

Links between *HealthInsite* and state web sites could provide a strong Commonwealth/state framework and improve consistency and quality of web based health information.



Part Five — Supporting Clinical Care

This section is concerned with the use of information and communications technologies to support clinical care through:

- better management of clinical information to support care;
- increased availability of online health services to provide direct clinical care; and
- increased use of online applications to support efficient clinical practice.

5.1 Better management of clinical information to support care

Clinical information systems

Re-engineering of health care delivery over the last decade has resulted in a greater cross-over of traditional boundaries, both physical and professional. With shorter hospital stays and substitution of care settings, care is increasingly moving out of hospitals and into the home and the community. The greater emphasis on coordination of care has led to greater involvement of multidisciplinary teams and the development of partnership models, breaking down the more traditional approaches to patient care. The boundaries between the health and

community sectors are also blurring. These changes have brought with them the increasing recognition of the need for effective communication and sharing of clinical information both with providers and with consumers to optimise individual care — and the limitations of the current paper-based system in this context.

Better information flow for clinical care is about bringing information to the provider and the consumer at the point of care to enhance the quality of clinical decision making. Information and communications technologies can now provide the tools whereby essential clinical information can be rapidly transferred both within and across care boundaries to support the overarching objective of truly seamless care. While much has been documented about the problems in exchanging information in the current paper-based environment, it needs to be acknowledged that information technologies are not in themselves solutions but enablers — technical approaches alone will not achieve better information management. Rather, the organisational and cultural aspects of how information is currently exchanged, the barriers to exchange, the clinical information needs of both consumers and providers at the point of care must be addressed before such



technologies can be effectively used to improve the management of clinical information as articulated in Part 1.

As these issues are addressed, the health care system in the future is likely to be underpinned by increasingly sophisticated clinical and administrative information systems that enable a whole range of clinical information to be available online at the point of care. For example, in hospitals clinicians will be able to access a patient's medical record online at clinical workstations located throughout the hospital, record notes, order tests and treatments, receive results, refer the patient on to other clinicians or services, and review the progress notes of nurses, allied professionals and other clinicians. Built in to such clinical workstations will be a variety of decision-support tools such as alerts and prompts, and online access to up-to-date clinical advice, including clinical practice guidelines and other health knowledge-bases. Such systems will also have the capacity to provide patients with health information tailored to their needs, electronically and in hard copy.

Clearly, the information needs will vary according to the nature of the service being provided, the needs of the provider and those of the consumer. For example, the information needed to treat a patient in an intensive care setting is substantially different in both content and amounts from that of a general practitioner reviewing the same patient after discharge.

As the electronic exchange of information becomes increasingly commonplace across the health care system, boundaries will increasingly blur. While the hospital is the logical starting point, the endpoint

will see consumers and their providers, with their consent, being able to access personal health information 24 hours a day at the point of care and regardless of location through the development of electronic health record systems.

In addition, these benefits will not be limited to providers and consumers at the direct point of care. The enhanced capacity to collect quality clinical data will have great benefits to the wider community through better information management for quality improvement purposes, service planning and delivery and public health. For instance, more efficient and effective collections on treatments and outcomes will enable clinicians to more easily review their own practice patterns and compare these with their peers.

To implement such clinical information systems will require a total re-engineering of the way that information is currently communicated. While compatibility of operating systems is a major component, much ground work needs to be done to determine the core clinical information needs of both providers and consumers along the care continuum, how to convert this into a clinically useful format and how to address issues of liability, privacy and intellectual property.

The inherent mix of public and private services in the Australian health system poses its own challenges. Moving the health sector progressively online will create a shift in the way that providers operate. This will require significant cultural change across the health and community sectors. The outlays required on information technology, especially within a rapidly changing environment mean that the benefits to the private



practitioner in terms of time saved and more effective clinical practice will need to be clearly demonstrated before such systems will be adopted more widely in the private sector. The crossing of professional boundaries, the need to acquire new skills, the changing face of the workplace and changing consumer expectations and knowledge levels are some of the key issues to be managed along the way.

5.1.1 Develop a national framework for the use of electronic health records for service delivery purposes

Context

Currently the majority of health care records exist as discrete paper-based entities held at a variety of different locations, resulting in a fragmented picture of the individual's health needs and history. They cross traditional and non-traditional health care sectors, and health and related community support services. The quality of information contained within them varies enormously and problems often arise with illegibility and issues about quality, appropriateness of content and loss of information.

Access to the appropriate information at the time of care delivery is central to good clinical decision-making – practitioners and consumers need the right information at the right time. The greater focus of health care policy on providing a 'seamless delivery of care',

particularly for the frail aged, the chronically ill and those with other complex care needs has highlighted the need to improve information exchange between different types of services and providers. The increasing shift in health care out of hospitals and into the community has also led to a wider range of services being utilised, often resulting in duplication of time and effort through repeat assessments and history-taking.

Increasingly, the potential benefits of electronic health records in improving efficiency, safety and quality of care over paper-based systems are being recognised across the health sector. As far back as mid-1996, the Taskforce on Quality in Australian Health Care¹³ advocated the use of a patient-centred, computerised, clinical information system with links between different health care providers as the only practical way of ensuring that relevant health information is made available to practitioners.

Electronic records and transmission can provide powerful tools to link the isolated islands and fragments of information that currently exist between services and allow practitioners almost instant access to a comprehensive picture of an individual's health record and status. The potential benefits to health consumers and providers are substantial, including:

- reduced numbers of adverse events caused by lack of information about the individual consumer at the point of care;
- reduced duplication of diagnostic tests due to unavailability of previous test results;

13 Australian Health Ministers' Advisory Council, *The final report of the Taskforce on Quality in Australian Health Care*, AGPS, Canberra, June 1996.



- enhanced decision-making for practitioners and consumers (and therefore increased quality of care and health outcomes) through online access to decision-support tools such as clinical practice guidelines, prescribing alerts and recent information on diagnoses, treatment and prevention;
- greater coordination and integration of care across the care continuum through increased exchange of information between service providers in the health and community sectors;
- individual consumers being confident that, subject to appropriate privacy protection and their consent, regardless of where they seek or need health care, the health care professional treating them has full access to relevant clinical histories and treatment information. This will mean they don't have to go over the same questions and assessments each time they see a different provider; and
- efficiency gains through time saved in retrieving information and reduced duplication in ordering tests. Ordering of tests and treatments and arranging appointments and referrals can be substantially sped up with direct electronic requests. Data will be collected and made available more quickly, thereby increasing the time available for direct patient care.

The National Health Service in Britain has embraced the concept of electronic records for service delivery and has now commenced developing a national system of lifelong electronic health records. Substantial progress has also been made towards the Good European Health Record and the recommendations of the

General Practice Strategy Review Group in Australia include support for a similar concept.¹⁴

A key underlying imperative in this area of data linking for service delivery purposes is for there to be consistency of approach across Commonwealth, state and territory jurisdictions and in different forms of care – in the public and private sectors, and in acute and community care settings. People are very mobile and receive assistance in a variety of settings and from different care providers. It will therefore be necessary to have a system of data linking that is able to operate across these various settings.

A framework of how such systems of electronic records might look in the Australian context is shown in diagram 5.1.1. This is not meant to suggest that there would be one record system. There will be many because information needs, and therefore the level and type of detail required for service delivery, vary substantially across health care settings and among health care providers. In such an environment of multiple record systems, it is essential for common elements to be agreed in order to achieve a high level of compatibility. It should also be noted that interchange of information between electronic record systems is expected to take place in a distributed data network. Data would reside essentially where it is collected, rather than a single, centralised repository of health records. Sub-sets of these records would be brought together for purposes of exchanging relevant clinical information. Nevertheless, there are major issues to be dealt with in terms of privacy and security of information from

¹⁴ General Practice Strategy Review Group, *General Practice: Changing the Future through Partnerships*, AusInfo, Canberra, March 1998.



both the perspective of providers and consumers – as raised in section 3.1.1.

The need for both users' and consumers' interests to drive the technical solutions rather than the reverse is also fundamental to the development of electronic health records. As evidenced by some of the failed attempts to date, unless an electronic record is useful to the care provider, user friendly and efficient and acceptable to consumers it will not be implemented. Any such developments will therefore depend on close collaboration with a range of health care professionals and consumers, to ensure their routine use in service delivery.

Objective

1. Development of a national framework for electronic health record systems for service delivery purposes ie a national framework for recording and sharing patient clinical information for health care service delivery.

Progress to date

Basic infrastructure

To realise the benefits as outlined above, electronic record systems need to have the capacity to exchange, integrate and manipulate the data. This requires the clinical information to be coded in a common language. The absence of such a shared language and classification system would prevent reliable and accurate electronic communication of information and the use of interactive decision supports (eg drug alerts). However, as discussed, clinical information needs vary across care settings and different clinical terms, coding and classification systems will be required in addition to the baseline work

that has already been undertaken through the National Health Data Dictionary. A national workshop to examine this problem has recommended developing an Australian clinical thesaurus, using uniquely identified concepts in the Unified Medical Language System (UMLS) as a common reference point and a feasibility study is currently being planned. This would enable different terms used in the various settings to be brought together meaningfully into shared records. However, there is still a substantial amount of work to be undertaken in developing comprehensive classification and codesets across the health and community sectors before a full clinical thesaurus of terms can be achieved. Community health and general practice have commenced the process of developing and/or agreeing national code-sets for their domains — integration across these domains will be essential.

The Commonwealth has funded the National Centre for Classification in Health to convert ICD/10-AM, the morbidity classification system used in hospitals, to database format, so that these terms can be added to any national thesaurus of clinical terms. Plans are also underway to develop a national list of pharmaceutical products, together with a drugs classification system suitable for interactive prescribing decision-support. Similar consideration is being given to developing code-sets for pathology and diagnostic imaging ordering and results.

Establishing a common architecture of health record systems is the most pressing need in this area. There are many initiatives under-way which seek to enable the exchange of records, or sections of records. However, these are of little or no value nationally without an



underpinning architecture and will result only in 'islands' of incommunicable data. Australia is chairing the international working party addressing the problem of health record architecture standards, and this work is receiving support at a number of levels, including DAC, DISR and NSW. The General Practice Computing Group has established a working party to develop a view for general practice, and the Commonwealth has scheduled a series of national workshops this year to support collaboration on Australian requirements for an electronic health record architecture.

The national standards workshop also gave priority to examining a health record architecture, establishing standards for record linkage, and sorting out coding. Messaging standards, and use of record linkage were also listed as priorities, followed by issues associated with refining technical standards for imaging and transmission of data for health settings. More detail about standards development is contained in section 3.6.1.

Research

The Commonwealth is funding a Partnership Project with Queensland Health and the Royal Brisbane Hospital to explore the communication requirements in providing seamless care throughout the referral network associated with a major teaching hospital. A critical perspective underpinning this project is to understand the business requirement before selecting the appropriate technology. In some circumstances the communication required may suggest a change of work practices so that clinicians have better access to each other, rather than employing technology in every instance.

The Coordinated Care trials have provided valuable experience on integrating care for selected groups of health consumers. The General Practice Strategy has identified a role for Divisions of General Practice in supporting the development of information technology to facilitate shared care and integration. Hospital in the home, early discharge and other acute care changes are forcing the requirement for better coordination, even if the response remains patchy. States are recognising the need for integration, and many are pursuing models of integration in their jurisdictions.

Privacy

Issues of privacy associated with the use of a system of electronic health records are discussed under section 3.1.1. It is critical that consideration of privacy issues be incorporated at the outset in the design and development phases. In particular, consumers may want to mask parts of their records from particular providers or services.

Proposed actions

Development and implementation of a national framework for electronic health record systems is a major undertaking. It will require substantial preliminary work, in addition to work that has already been undertaken. It will take time and it is expected that individual components of an overall framework for electronic health records will be developed progressively.

The key proposed action in this area is the establishment of a national Electronic Health Records Taskforce (Commonwealth, state and territory, key stakeholders). The starting point for the



Taskforce will be to investigate the business case for electronic health records. There is an assumption that they are needed (some evidence has been provided above) but it is appropriate to set out the arguments for proceeding down this path. The next stage will be to create/define the form of what we are wanting to develop. What exactly are we working towards — an elaborate, centralised system, regional networks, standard electronic records for specific sections of health that allow individual tailoring or something else? A view on this should be developed by the Taskforce after consulting widely and undertaking an appropriate literature search of overseas and Australian activity.

It is assumed that an Australian health records system will contain several discrete components — perhaps a standard health record that would be used by general practitioners, one for hospitals etc. It will be important to draw on the expertise available and listen to stakeholders to define the specifications for these key components.

These investigations of the Taskforce (as outlined above) will define the preferred direction and the detailed 'look and feel' for the key components of an electronic health records system. However, such a system could not run without the infrastructure — namely the infrastructure that is needed to allow an electronic health records system to operate in a consistent, secure and reliable environment.

The Taskforce is expected to conclude its (initial) investigations by developing a work program and costs, and producing a report for Health Ministers which recommends a way to develop an electronic records system for Australia.

The report should be sufficiently detailed as to allow Health Ministers to make decisions and commit resources.

In summary, the Taskforce will:

- investigate the business case for introducing nationally integrated systems of electronic health records that respects the dignity of each health consumer and allows them to enjoy improved health outcomes delivered more effectively;
- consult widely with stakeholders to identify the form and key components electronic health record systems (eg the need for a separate, standard health record for each of general practice, acute care, community health etc) suitable for Australia;
- develop specifications (including the functions – administrative, clinical and policy/planning uses – core data items etc) for the key components of such systems (as defined above), drawing on work in progress and seeking advice from relevant sources;
- describe the building blocks that will need to be put in place to enable electronic health record systems to operate (such as issues concerning record linkage, security/authentication, telecommunications, messaging, imaging standards and coding);
- review progress that has already been achieved, define the additional work program that needs to be undertaken and determine who should undertake the work, including, where necessary, the creation of new working partnerships:
 - to develop and implement the key components of electronic health record systems; and
 - to develop and establish the building blocks that will underpin



the operation of electronic health record systems;

- develop a plan, nominate priorities and provide a timetable to develop electronic health record systems in Australia;
- cost the plan and provide an indicative timetable; and
- report to Health Ministers by August 2000, recommending a way ahead for the development of electronic health record systems in Australia.

The plan and timetable for implementation of a framework of electronic health records will contain elements that relate to privacy, standards, infrastructure etc which will be included as action items under those various headings in this document — as work already in progress. The issues relating to the use of a personal health identifier to ensure accurate identification of clinical information exchanged through electronic records for clinical decision-making are discussed under section 3.1.4.

Timetable

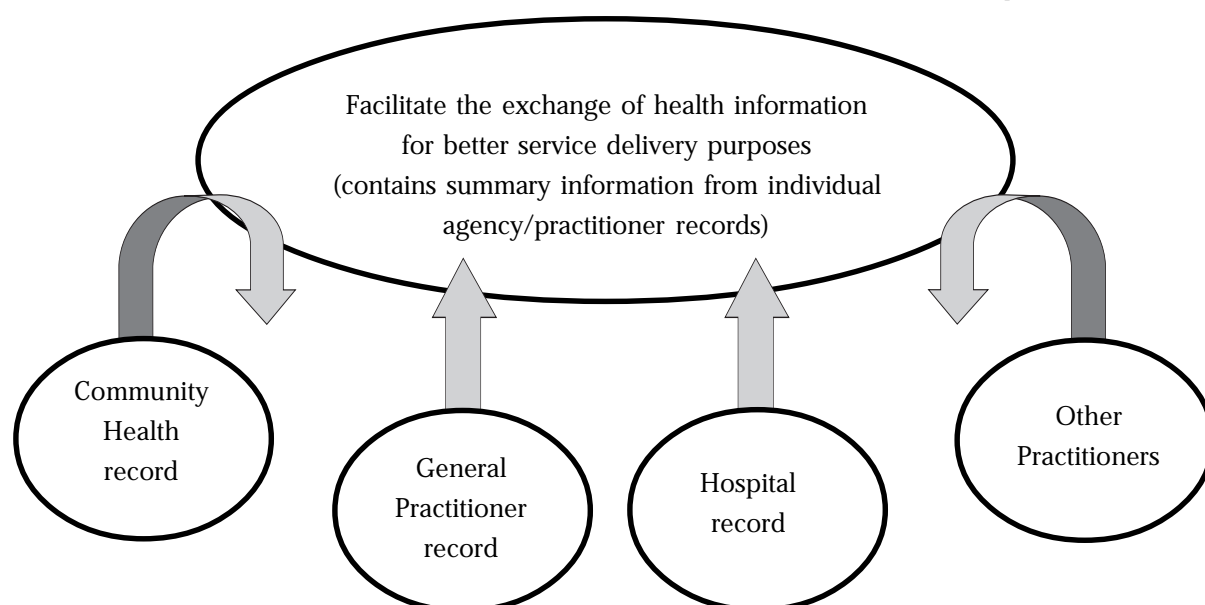
1. Establish a national Electronic Health Records Taskforce – by end 1999.
2. Develop an initial description of a framework for electronic health records and a plan and timetable (in the form of a report to Australian Health Ministers) for their meeting in 2000.

Responsibility

Commonwealth Department of Health and Aged Care to initiate.

Commonwealth (including the Department of Health and Aged Care and the Health Insurance Commission), the General Practice Computing Group, states and territories and clinicians to participate. Peak organisations, the Privacy Commissioner, clinicians, other health providers and consumers to be consulted. The Health Insurance Commission also to be involved in developmental work associated with a personal health identifier.

Diagram 5.1.1 Proposed framework of electronic health records for linking data for better service delivery





5.1.2 Expand development of decision-support services

Context

Rapid advances in new therapies and interventions, increasing emphasis on evidence-based health care and greater consumer expectations mean that health care professionals can no longer expect to retain the substantial amount of knowledge required to keep abreast of modern medicine. Information and communications technologies have the potential to enable practitioners (and consumers) to rapidly access essential and up-to-date information about individual patients, their conditions and management choices, thereby supporting decision-making for both practitioners and patients. Research in the USA has shown, for example, that medication errors in hospitals can be substantially reduced (27% reduction in mortality among patients being treated with antibiotics in one Salt Lake City hospital) by installing computerised physician-order entry systems that display warnings in case of drug interactions¹⁵.

Electronic decision-support systems can include:

- direct electronic access to individual patient records (as discussed in section 5.1.1) which allows clinicians to determine allergies, current medications and conditions etc;
- electronic links to medical information, journals and specific 'chat groups';
- electronic access to endorsed clinical guidelines and pathways;
- built-in alerts and prompts to assist in treating and prescribing, and ongoing monitoring. For example, a practitioner prescribing a specific intravenous antibiotic that could adversely affect renal function can be prompted to check the patient's renal function both before and during treatment. Such electronic prompts can also advise of potential interactions between current and new medications etc; and
- peer support networks and access to second opinions.

There are two key components of any decision-support system. Firstly the information has to be created, kept up-to-date and made available in a format that facilitates its electronic delivery. Secondly, the information needs to be delivered when and where it is needed.

At present in Australia there is no agreed model for making independent authoritative Australian clinical content available to clinicians, in either a paper-based or an electronic format. High quality clinical guidelines and other decision-support information is published by a range of organisations, including the Commonwealth and state health departments, non-government organisations and commercial organisations. Much of this material is made available to health professionals at little or no charge, but some publishers rely on sales revenue for their ongoing viability.

There are some inherent risks that need to be addressed in how the commercial development and funding of decision support might influence medical practitioners. One such example is how

15 SL Pestotnik, DC Classen, RS Evans, JP Burke, *Implementing antibiotic practice guidelines through computer-assisted decision support: clinical and financial outcomes*. Annals of Internal Medicine 1996; 124:884 - 90.



the pharmaceutical industry might unduly influence general practitioner behaviour as an extension of the use of advertising to fund general practice software. Standards need to be developed in this area. Currently, the National Prescribing Service has a working party on electronic decision support and the Australian Pharmaceutical Manufacturers Association is developing guidelines on advertising in decision support systems.

There is a role for government and professional groups to ensure that quality information is maintained and disseminated.

Substantial research effort is required if we are to understand the nature of the clinical decision-making process and the points at which additional information could usefully support the clinician, the nature of the information that should be provided and the most useful form of delivery.

However, there is general agreement that clinical decision-support resources will be most useful once they are imbedded in the medical software rather than as 'add-on' products or separate software packages. Integration of consumer medical information into the clinical software utilised by practitioners at the point of consultation provides an ideal vehicle for the provision of health information to consumers. This information would need to be controlled centrally to ensure quality.

In most instances where the information is to be accessed as part of the clinical encounter, electronic decision-support information will be delivered via commercial products and the medical software industry will take the key role in

ensuring that the delivery mechanisms meet the needs of their customers.

In addition, standards requirements for decision-support are being identified as part of a larger look at data requirements for harvesting information from records and feeding it back into the clinical care process.

Internet technology also enables a wider range of information to be available to health professionals in a library format. Many such services are already in existence or are being developed by government and private providers. For example, the *HealthInSite* (see section 4.1.1) and the Clinical Information Access Project (CIAP) sponsored by NSW Health.

Objectives

1. Establish a coherent approach to the development of decision-support systems and electronic clinical resources for health professionals.
2. Bring new decision-support services into operation.

Progress to date

There is a range of current activity in this area. For example:

- the National Health and Medical Research Council are developing and promulgating clinical guidelines, and endorsing guidelines developed by other organisations;
- a number of trials are underway which will test the feasibility and impact of incorporating clinical practice guidelines into medical software where they will be accessible at the point of decision making;



- work on evidence-based medicine being conducted by the Royal Australasian College of Physicians;
- the establishment of clinical advisory groups by the Health Insurance Commission (HIC) to examine HIC claims information to provide feedback to medical professionals. A key objective is to advise on the appropriate use of clinical guidelines which can be used to identify best practice indicators, and ultimately be fed into decision-support software;
- investigation has been conducted of the feasibility of developing a joint electronic product grouping independent pharmaceutical and clinical reference materials; and
- the Department of Health and Aged Care convened an information technology standards workshop and a subsequent coding workshop during 1998. The standards workshop included a component on clinical decision-support and a follow-up workshop specifically on decision-support is planned for 1999.

Proposed actions

The Commonwealth Department of Health and Aged Care to work with the medical profession, clinical colleges, the hospital sector and information suppliers to determine priorities for Commonwealth support for knowledge base and decision-support development. In particular:

- gain agreement to a coordinated approach from key stakeholders;
- identify the key (priority) areas of decision-support that major users groups will want to adopt in the foreseeable future; and

- devise an action plan for the development of specific decision support services.

Where decision-support tools involve access to a patient's health information, privacy issues will need to be addressed as discussed in section 3.1.1.

Timetable

Develop a framework and priorities for action – 1999.

Responsibility

Commonwealth Department of Health and Aged Care, General Practice Computing Group, clinical colleges, Health Insurance Commission, National Health Information Management Group, hospital sector. The Attorney-General's Department and the Privacy Commissioner should be consulted to ensure that any decision-support activities involving personal health information take account of privacy concerns.

5.2 Increased availability of online health services to provide direct clinical care

Introduction

The use of online technologies for direct provision of health care provides exciting opportunities to increase consumer and provider access to a range of health services, particularly for those living in remote and rural communities.

Increasingly, with the emergence of internet based technologies and distributed systems, telehealth is



becoming progressively merged into mainstream health care delivery.

The following section outlines strategies aimed at increasing the availability of services where and when they are needed through the use of communications and information technologies.

5.2.1 Develop strategies to expand the appropriate and cost-effective use of telehealth services

Context

The term telehealth (or telemedicine) is used to describe a health delivery system which provides health related activities at a distance between two or more locations using technology-assisted communications.¹⁶ Currently, the main applications for telehealth services in Australia are:

- video-conferencing (clinical care; health care worker education, training and peer support; and administrative purposes);
- tele-imaging (eg transmission of radiological and ophthalmological images between locations); and
- telepathology (transmission of medical tests between locations).

The further development and expansion of telehealth services in Australia offers very real benefits including:

- increased access to appropriate health services for both providers and patients in regional and remote areas;

- reduced time away from work and homes for health consumers living in regional and rural Australia;
- more efficient health service delivery through reduced delays and costs relating to patient transfers;
- more efficient and effective diagnosis and treatment through rapid access to diagnostic test results and online advice for providers;
- improved communication between health care providers across health care settings;
- improved professional support and decreased professional isolation for rural and remote practitioners;
- potential cost-savings through supporting home based care rather than institutional care;
- increased online support, education and training of health care professionals; and
- a valuable vehicle to export Australian health care expertise (see Part 7).

Given Australia's geographic size and thinly populated interior, telehealth is a particularly attractive option. Indeed, Australia is one of the few countries in the world to have made significant advances in some types of telehealth service delivery. Furthermore, applications of telehealth need not be limited to rural and remote settings. Potentially, there are as many uses for telehealth methodologies in urban settings, such as radiologists' use of online facilities to review urgent cases from home by dialling into the New (Sydney) Children's Hospital's network.

16 National Telehealth Committee, *The Business Plan of the National Telehealth Committee: Strategic Directions for Telehealth 1998 – 2000* – referred to Australian Health Ministers' Advisory Council, October 1998.



However, while recognising the great potential that telehealth has to improve health service delivery, it should be acknowledged that there are some significant issues that need to be addressed before more widespread expansion of such services can occur. These include funding of telehealth services, medico-legal aspects, privacy concerns, quality assurance, telehealth standards and guidelines, and evaluation.

Clearly, there is substantial overlap between such issues for telehealth and for the uptake of other information technologies in health and it is therefore crucial that developments in telehealth occur in parallel with other developments. The overlap includes:

- electronic medical records which would make telehealth services easier to deliver and document;
- decision support;
- coordinated care;
- online health information for consumers and health professionals; and
- call centres.

A critical issue for government is the financing of telehealth services. Funding approaches need to take into account state and Commonwealth funding responsibilities, the nature and appropriateness of the proposed telehealth services, the public/private mix, quality and standards issues, cost-effectiveness and the rapidly evolving nature of communications technologies and their impact on service delivery and work practices in the future.

Furthermore, the application of telehealth services across state and territory borders is limited by the lack of a national registration system for medical practitioners, an issue of concern to both the Australian Medical Association and State governments¹⁷. Serious medico-legal issues could arise if a doctor were to provide telehealth advice to another state in which he/she was not registered. While Commonwealth legislation has been enacted that allows mutual recognition by states and territories for a range of professions (including the medical profession), medical practitioners must still be registered in each state and territory in which they practice.

Future developments in telehealth must be driven by the needs of the health sector and consumers, not the communications sector. It is also important to bear in mind the potential negative impact that telehealth services may have on workforce issues if it were to become a substitute for direct services. While there is great potential to retain and recruit personnel to remote areas through provision of support, education and training, widespread delivery of health care at a distance may in fact reduce the valuable social interactions currently provided by visiting health care professionals. It may also discourage providers moving to remote areas if they were able to provide services from urban locations without relocating their families etc.

The support for telehealth services within remote Aboriginal communities has been mixed. While on balance it would appear that telehealth has significant benefits for

¹⁷ House of Representatives Standing Committee on Family and Community Affairs, *Health Online: A Report on Health Information Management and Telemedicine*, Commonwealth of Australia, Canberra, October 1997.



distance learning for both health care workers and communities and for improving health outcomes and cost-effectiveness, telecommunications issues and cultural barriers have been cited as limiting its widespread uptake by such communities.

There are many different projects being carried out in all states and territories. Clearly, evaluation of the cost-benefits of the various types of telehealth services that have already been initiated or are planned is required to enable such services to be used appropriately and effectively. The ANZTC provides a forum to share such information and facilitate building on others' experience and therefore reducing the duplication of effort.

An international workshop on evaluation and cost effectiveness of telemedicine was hosted by Australia in Melbourne in February 1999 under the auspices of the G7/8 Information Society Global Health Care Application; Project 4. The workshop was designed to explore and identify the key elements of an international framework for evaluation of telemedicine and the proceedings have been published.

Progress to date

In 1996, the Australian Health Ministers' Advisory Council (AHMAC) endorsed the establishment of the National Telehealth Committee, now known as the Australian New Zealand (ANZ) Telehealth Committee.

The Australian New Zealand Telehealth Committee is currently undergoing a significant process of change. In June

1999, the Committee undertook a two day planning process to take stock of its role and function, its progress to date, and its future directions in the context of the broad health sector reform agenda and health information technology/telecommunications agenda. In particular the Committee identified the need to more closely align its business to a range of key health system reforms and priorities.

In parallel with the Committee's decision to reassess its future role and directions, South Australia is undertaking a review of the ANZTC for AHMAC, covering the Committee's project outcomes to date, and its future directions and goals.

Both the Committee's report to AHMAC and the AHMAC review process will be considered by AHMAC in October 1999. Once the Committee's report and the review have received AHMAC endorsement, this information can be included in *Health Online*.

Substantial progress has been made by the ANZTC in considering the many issues related to the rapid expansion, application and sustainability of telehealth services across Australia (and more recently New Zealand). This work includes:

- drafting a submission on behalf of the Royal Australian and New Zealand College of Psychiatry for the listing of tele-psychiatry on the Medicare Benefits Schedule;
- drafting a guide for stakeholders on the preparation of telehealth submissions for the Medicare Benefits Schedule;
- in conjunction with the Commonwealth Department of Health and Aged Care,



commencement of a consultancy to develop a generic evaluation methodology for telehealth (The expected completion date is December 1999 and the project has been funded by the Commonwealth Department of Health and Aged Care);

- drafting a set of national telehealth data definitions which have been submitted to the National Health Data Committee for consideration;
- publication on the ANZTC website of a national discussion paper titled "Telehealth and the Law" identifying the legal and legislative issues for telehealth;
- drafting a discussion paper on international legal issues for telehealth in Australia;
- maintenance of the ANZTC's website (www.telehealth.org.au) and updating, on the website, the database of current telehealth projects, programs and services across Australasia; and
- dissemination of information and promotion of national telehealth issues and activities through conference and seminar presentations. The secretariat and committee have also acted as a resource for information provision to members of the public (including health professionals) and international enquiries.

Responsibility

Commonwealth Department of Health and Aged Care, the Australian New Zealand Telehealth Committee, state and territory health departments. The Attorney-General's Department and the Privacy Commissioner should be consulted to ensure that any proposals in the telehealth area take account of privacy concerns.

5.3 Increased use of online applications to support efficient clinical practice

Introduction

Significant opportunities to improve the efficiency of clinical health services and to reduce errors arise from the implementation of new information management, communications and electronic commerce systems for use by clinicians at the 'point of care'. Early implementation of new tools of this sort is important not only for its direct benefits but also for the indirect benefits in increasing clinicians use and acceptance of the new technologies.

There are numerous unrelated pilot projects demonstrating the benefits of such systems throughout the Australian health system but these are isolated initiatives and often 'islands of technology' which do not easily connect to wider communication and electronic commerce systems.

The following section identifies the first stage of action to identify and harvest these benefits on a national basis. More work needs to be done to identify priority initiatives in this area.

5.3.1 Enabling electronic requests for diagnostic and treatment services

Context

A number of hospitals across the country are implementing or planning to implement computerised information systems that support online requests by



clinicians and reporting of results of diagnostic and treatment services.

The ability to electronically request and receive diagnostic testing and treatment services has the potential to result in significant benefits for the health sector. These include:

- increased access to test results for practitioners, reducing delays in responding to abnormal results, and hence improved quality of care for health consumers;
- accurate and timely communication and accounting for service requests and cancellations from clinicians to service departments such as pathology laboratories and medical imaging;
- reduction of time wastage and errors resulting from difficulties in reading clinicians' hand written requests and/or incomplete request data; and
- reduced duplication of tests requested as the information system will alert the clinician to potential duplicate orders.

As discussed earlier in section 3.2.1 online services should be encouraged on the basis of existing open standards, for example, HL7 standard for the communication of health information rather than on proprietary protocols developed by commercial providers.

Objectives

1. The objectives in this area are to:
 - 1.1 provide faster access to diagnostic and treatment services for both practitioners and consumers;
 - 1.2 achieve greater efficiencies by enabling diagnostic and treatment services, claimable under Medicare, to be requested electronically;

- 1.3 understand the benefits to the health sector and patient care of electronic ordering;
- 1.4 understand and address the business, technical, privacy, legal and clinical risks associated with the introduction of the electronic communications (requests); and
- 1.5 achieve compatibility and avoid duplication with other similar systems eg electronic requests for pharmaceuticals (e-script).

Progress to date

Under the *Health Insurance Act 1973* hospitals and other health care providers are required to seek approval for changes to practices affecting the manner of requesting services, providing the signature on the request and storage of the resultant request. The Health Insurance Commission (HIC) is working with the Department of Health and Aged Care to enable the first phase of the project, involving the New Children's Hospital in Sydney, to proceed with electronic requesting of diagnostic services for private patients.

The New Children's Hospital trial is the first step. It will help identify the risks and clarify the way forward – evaluation will therefore be an important component of this trial. Once the way forward with the New Children's Hospital has been agreed and approval mechanisms put in place within the HIC, consideration will be given to extending the capability to other hospitals, in the first instance. Clearly, there would be a completely new set of issues, including privacy issues, to be addressed regarding the extension of these services beyond the hospital setting.



Proposed actions

The New Children's Hospital project is expected to proceed as follows:

- preparation by the Health Insurance Commission of approved instruments under the terms and conditions of the *Health Insurance Act 1973* and other relevant regulations;
- approval for the New Children's Hospital to proceed for an agreed period, limited to 12 months; and
- following a review, on completion of the project, a decision will be made regarding ongoing approval for electronic requesting.

Timetable

1999/2000

Responsibility

Health Insurance Commission, New Children's Hospital (Sydney), Commonwealth Department of Health and Aged Care, and NSW Health.

5.4 Future work

Enabling Electronic Prescribing

The electronic transmission, storage and processing of prescriptions generated by computerised medication management programs is considered to be an important area to advance. Major benefits would include access to the whole medication record, monitoring of medication use, adverse drug event prevention and identification of inappropriate medication use such as drugs of addiction.



Part Six — Using Information to Build a More Efficient and Effective Health Care System

This section of *Health Online* is concerned with how better information management through the use of information and communications technologies can lead to the more effective and efficient delivery of health care in Australia.

Two key objectives are discussed:

- facilitating the greater take-up of electronic commerce to produce a more efficient health system; and
- further developing information management practices to improve the availability of aggregate health data for research, policy and planning purposes to provide a more efficient and effective health system.

6.1 Facilitate the greater take-up of electronic commerce to produce a more efficient health system

Introduction

Greater uptake of electronic commerce within the health care sector offers opportunities to reduce costs across both supply and distribution chains and to provide improved client services through

quicker turnarounds. It can substantially reduce costs associated with inventories, procurement and distribution of products. However, while the health care industry is a multi-billion dollar industry it is still relatively underdeveloped in the use of e-commerce. This can be attributed to several factors, including the prevailing culture of “being there for the patient and not as a business” and the complex organisational structures within hospitals. For example, the hospital supply chain is quite complex — large teaching hospitals may have several thousand suppliers.

The real power of information and communications technologies is not in making existing processes work better, but that they provide the opportunities for organisations to break old rules and create new ways in which to go about their business — ie business re-engineering.¹⁸ In essence this involves identifying the need to change and then setting about achieving and sustaining performance improvement within a context of cultural and behavioural change.

The impact of such technologies in re-engineering health business processes will be to make supply, distribution and customer services more productive and effective. Not only does e-commerce

18 M Hammer and J Champey, *Reengineering the Corporation: A Manifesto for Business Revolution*, Allen & Unwin, St Leonards, 1994.



offer an opportunity to fundamentally change the way in which 'health business' is conducted but it also provides a key vehicle to facilitate the uptake and expansion of computerisation in many areas of health service provision that are still predominantly paper-based.

6.1.1 Advancing the use of electronic supply chains in hospitals

Context

Re-engineering of health care supply chains to take advantage of e-commerce techniques can achieve significant cost and resource efficiencies, particularly in the acute care sector. Improved supply chain management will also contribute to more accurate costings of episodes of care, leading in turn to better planning and resource allocation.

Objectives

Develop an electronic supply chain strategy which includes:

1. Establishing best practice models of supply chain management to educate and facilitate the greater uptake of e-business supply chain methods in hospitals.
2. Establishing standards to facilitate e-business transactions within the hospital supply chain (This objective and related actions are also included under section 3.2.1).
 - 2.1 Establish a standard for product numbering in hospital supply chain operations.
 - 2.2 Establish standards for electronic messaging within the sector.

- 2.3 Establish an electronic catalogue for health care products.

Progress to date

The PeCC project (Project Electronic Commerce and Communication), established in 1996 by the then Department of Industry, Science and Tourism in collaboration with CSIRO and pharmaceutical industry players, had the goal of rationalising clinical supply chains through implementation of electronic commerce using internet based technologies and open systems in a framework of internationally accepted standards. The project has achieved significant progress, namely:

- analysis of supply chains in several hospitals identifying orders of efficiency attainable through application of electronic commerce methodologies;
- collaboration with industry to establish an electronic gateway and common e-forms for the exchange of orders between suppliers, distributors and manufacturers;
- facilitation of a Department of Defence proto-typing project for an electronic catalogue for clinical products; and
- establishing awareness in the health care industry areas of wastage and potential for more efficient purchasing, distribution and administration.

This project continues under the guidance of an Executive Council comprised of representatives from the pharmaceutical and communications industries and state and Commonwealth government health representatives.

The Department of Health and Aged Care has contributed to PeCC project funding



and will continue to be involved with this project to ensure effective communication of outcomes and emerging frameworks for standards. It is also considering advocating the use of modified EAN numbers in the proposed national pharmacy coding system.

Proposed actions

Planned health sector activities include:

- establishment of a new project focussed on:
 - cataloguing state and hospital based activities to identify progress to date and potential models for hospital supply chain enhancement;
 - analysis of issues and barriers to health sector take-up of electronic commerce;
 - development of best practice models for re-engineering of clinical supply management;
 - reporting the findings to state health and hospital executives;
 - running a series of information workshops/seminars to communicate the opportunities, benefits and potential models for re-engineering; and
 - encouragement of state and territory based jurisdictions in the hospitals and states to embark on re-engineering activities within a national framework.
- ongoing support for continuing industry reforms through PeCC project sponsorship;
- supporting the development of the EANnet 4 Health electronic catalogue; and
- continuous monitoring of diverse activities in the sector to ensure consistency with the developing national standards framework.

Timetable

1. The audit and reporting activities will be completed by end September 1999.
2. The workshops/seminars will be held in the first quarter of 2000.

Responsibility

Commonwealth, states and territories, and the private sector.

6.1.2 Increase the level of electronic claiming for Medicare and the Pharmaceutical Benefits Scheme

Context

The Health Insurance Commission (HIC) is seeking to provide members of the public and health care providers with convenient and easy to use facilities to communicate electronically with the HIC. The intent is to expand the coverage of electronic services to rural and remote users and to progressively upgrade the sophistication of Medicare and the Pharmaceutical Benefits Scheme (PBS) services in line with the health sector's ability to support such services.

The HIC is committed to the use of international and national standards to facilitate networking in the health sector. The Medclaims service currently uses the X.400 standard and a number of approved Medclaims network providers to connect health care providers to the HIC. Through the internet, the



opportunity exists to expand take up of Medclaims, to expand electronic claiming to the PBS (see section 6.1.3), and to lower networking costs.

Objectives

1. Increase avenues for electronic submission of claims.
2. Develop the HIC's electronic infrastructure to support expansion of electronic transactions.

Progress to date

The HIC has a range of initiatives in progress to improve access to Medicare and PBS. Under the banner of *easyclaim*, the HIC has introduced a variety of products to encourage the submission of claims information electronically and complement its Medclaims service.

Telephone claiming

Since the trial of Medicare teleclaims in 1995, access to telephone claiming has been expanded to cover an increasing number of rural and remote communities.

Kiosk claiming

Trials commenced in October 1997 to test a Medicare electronic kiosk where customers insert their Medicare card and enter their claim details using a touch screen. This information is then transmitted overnight to the HIC. Now in phase 2, an improved user interface is being tested in some new sites to determine what further enhancements are required.

The possibility of moving the kiosk application to a later version of the Telstra Multi-Media Pay Phone is being investigated. This will allow sharing of

the kiosk facility with other content providers (eg Centrelink and the Department of Employment, Workplace Relations and Small Business). This has the potential to make use of the kiosk cost effective for other than high claim volume situations.

Fax claiming

Medicare fax devices enable residents in rural and remote areas to send their Medicare claims and medical accounts direct from their local pharmacy to the HIC and receive prompt payment. In the light of the Commonwealth Government's commitment to equity of access for the lodgement of Medicare claims, the product has also been made available in some metropolitan areas and where Medicare offices were closed. The HIC has installed almost 600 Medicare fax devices in selected pharmacies, specifically targeting population centres that do not have ready access to Medicare offices.

Direct bill claiming

Medclaims supports direct bill claims for Medicare services using electronic data interchange technology. Approximately 50% of Medicare claims are transmitted using the Medclaims systems.

Patient claiming from doctors' surgeries

Medicare connect is a product that allows people to have their Medicare claims sent overnight electronically direct from their doctor's surgery to the HIC. A trial of this service is in operation in the ACT and Northern Territory. This is a significant development in electronic lodgement and can allow improved access to Medicare services, especially for many people in rural and remote areas. It also allows



doctors to electronically lodge claims for all Medicare services, instead of only direct-bill claims. The trial of Medicare connect will be evaluated before any wider implementation.

Two-way claiming

The HIC is working with Private Health Funds to implement electronic transmission of in-hospital (gap) claims from the HIC to funds that participate in the Medicare two-way arrangements. Medicare two-way claiming arrangements provide improved lodgement facilities for Medicare and private health insurance fund claims. These allow members of funds participating in the two way arrangements to lodge their fund and/or Medicare claims at either their fund's offices or any Medicare office and facilitate quicker payment of gap claims.

Infrastructure

To support the receipt of large volumes of electronic information, the HIC is implementing an electronic commerce infrastructure. This project has included the installation of an electronic gateway to handle communications, security and privacy, and message management.

Proposed actions

The evaluation of the trial Medicare electronic kiosk (above) will be completed during 1999.

The HIC will continue to encourage the adoption of Medclaims by health care providers. A plan is being developed to transfer the Medclaims service from its X.400 network base to allow for claims to be transmitted across the internet.

Evaluation of the Medicare connect trial in the ACT and Northern Territory will be completed in the last quarter of 1999 and implementation of this service for the rest of Australia will start in February 2000.

During 1999, electronic transmission of in-hospital 'gap' claims will be implemented.

Timetable

Ongoing.

Responsibility

The Health Insurance Commission will coordinate these initiatives in partnership with clinicians, pharmacists, and the suppliers of practice management and pharmacy software.

6.1.3 Expand the use of electronic transactions in the Pharmaceutical Benefits Scheme

Context

There has been increasing interest in the use of online technologies for pharmaceutical transactions both to improve the efficiency and effectiveness of medication prescribing. Electronic prescribing can improve patient safety through reduction of prescribing errors created by illegible scripts or the re-keying of scripts by pharmacists. It also has the potential to assist in building and managing medication records for individuals over time, thereby allowing potential drug interactions, over-prescribing etc to be flagged. On the efficiency side, there are potentially significant savings to be gained for



government through ensuring that entitlements are only provided to those who are entitled. Savings for both government and pharmacists are also possible through reduced clerical times for handling of paper-based claims.

The Pharmacy Intranet Demonstration Project, an initiative of the Pharmacy Guild of Australia (in conjunction with its commercial arm, Guild Commercial Limited), the Health Insurance Commission and the Department of Health and Aged Care was established to test issues around the use of electronic transactions in the Pharmaceutical Benefits Scheme (PBS).

About 55 pharmacies in most states and territories participated in this project and regular consultations occurred with key stakeholder groups, including the medical profession and consumer representatives.

Privacy and security of health information as well as technical aspects of connectivity, standards and open specifications are among the issues examined during the project.

Objectives

The demonstration project aimed to assess the feasibility of establishing a national pharmacy intranet that links all community pharmacies in Australia. The aims of the project were primarily to test:

- electronic patient identification and entitlement checking for pharmaceutical benefits;
- progress the development of e-script transactions;
- the feasibility of electronic lodgement, assessment and payment of claims by pharmacists;
- the feasibility of the electronic

submission of prescriptions to pharmacists; and

- electronic commerce links with wholesalers and others.

Progress to date

The project, which was completed in December 1998, demonstrated the technical feasibility of a pharmacy intranet system in Australia. It demonstrated that real time interrogation of remote large databases can be undertaken without adversely impacting on pharmacists' work flow.

A successful trial of online patient identification and entitlement checking was completed and a range of electronic commerce links were further developed by the Pharmacy Guild with wholesalers and financial institutions. Progress was also made on developing systems for consolidating patient records; electronic lodgement, assessment and payment of claims by pharmacists; and the electronic submission of prescriptions to pharmacists.

Despite the extensive computerisation of community pharmacies, the project highlighted the need for further efforts in extending the use of information technology and information management in pharmacy practice and the need to develop an electronic communication platform that is integrated and interactive with other sections of the health sector. The project also highlighted the importance of a suitable framework for handling privacy and security issues in ensuring that further progress is made.

Proposed actions

Following consideration of the final report on the Pharmacy Intranet Demonstration



Project by the Minister for Health and Aged Care in mid 1999, it is anticipated that it will be made public, along with a report detailing the results of the consultation process on the Pharmacy Intranet Demonstration Project.

Possible follow-up activities include: redesign of electronic prescription/pathology forms; piloting of the electronic lodgement, assessment and payment of pharmacists' prescription claims; and investigation of the potential for electronic transmission of prescriptions.

Work is under way with pharmacies and their software suppliers to enable community pharmacies to submit claims electronically. Electronic claiming for the PBS requires that suppliers of pharmacy software incorporate the processing necessary to build the correctly formatted data messages and security software into their products. HIC will support this process through close consultation with software suppliers.

Timetable

Minister for Health and Aged Care to consider report — mid-1999.

Responsibility

Commonwealth Department of Health and Aged Care and Health Insurance Commission.

6.1.4 Simplified billing

Context

The Commonwealth Government is committed to increasing the viability of Private Health Insurance (PHI) for consumers. An Industry Commission

Report in 1997 identified (in part) the following issues with traditional billing arrangements:

- patients are not sure what the total cost and their component of that cost is prior to admission to a hospital;
- patients may receive medical bills over an extended period of time following conclusion of a hospital episode; and
- patients may not be sure when the last bill was received.

A taskforce convened to consider the status of the PHI in 1997 agreed to support trials of simplified billing. Seven sites undertook the original trials. The evaluation of the trials was positive (Source: Simplified Billing Trials Evaluation, Ernst and Young, December 1998). Factors that were found to be limiting the speed of the roll-out and uptake of simplified billing include:

- cost (particularly in the largely manual systems that are currently in usage);
- widespread medical acceptance of the new arrangements;
- mixed response from health funds;
- limited community awareness of simplified billing;
- lack of electronic data interchange (EDI) and electronic file transfer (EFT) payment systems throughout the health industry; and
- the lack of widely available integrated hospital and medical billing systems.

Simplified billing has now been implemented throughout Australia and efforts are being made to address the above factors.

Objectives

To increase the uptake of simplified billing by facilitating the electronic



connection of billing agents, health funds, the HIC, hospitals and providers, and to increase the uptake of simplified billing for private patients in-hospital services.

Progress to date

Health funds and billing agents are currently in the process of developing systems for the lodgement of simplified billing claims.

The status of simplified billing as at end July 1999 shows that there were 36 registered billing agents and that the percentage of in-hospital services lodged through simplified billing was 7.5%.

The HIC has developed a manual system for the lodgement of simplified billing claims for small billing agents which enables HIC staff to key details into a system from hard copy source documents supplied by the billing agent.

Two private health funds and two billing agents are currently transmitting simplified billing data to the HIC. Both are using HIC proprietary data formats.

The HIC, in conjunction with the National Consultative Group (NCG) for Private Health Insurance, has now developed formats for simplified billing based on UN/EDIFACT standards for the lodgement of simplified billing claims via EDI. A number of companies are currently developing and testing software using the UN/EDIFACT formats.

The HIC is piloting an electronic system utilising the HIC as a repository. The system allows input of claims data through a web browser. Data is transmitted and stored in the repository and released to Medicare for processing. At completion of processing, Medicare

updates the repository with claims information. The pilot billing agent then retrieves this information and produces relevant output to enable appropriate statements and accounts to be produced for patients and statements and payments for providers/hospitals.

The HIC is working with the Department of Health and Aged Care in consultation with billing agents, health funds, and software companies to determine the best methods of facilitating electronic connections among the parties. Ernst and Young has been commissioned to report on the suitability of proposed methods and what other barriers to the uptake of simplified billing need to be addressed.

Proposed actions

1. During the pilot

Consultations with stakeholders are being undertaken to finalise system requirements and identify future enhancements. This process will ensure that mechanisms are put in place will maximise the uptake of simplified billing.

2. Broader consultation

Broader consultation will be undertaken with providers and health funds as well as billing agents to determine the potential for electronic transmission of data by these stakeholders.

The HIC will work with the Department of Health and Aged Care to implement the recommendations of the Ernst and Young (1999) report.

Timetable

Pilot – September 1999.

Broader consultation – ongoing.



Responsibility

HIC will undertake and support development and implementation of processing systems for simplified billing and at the appropriate time will undertake promotional activities in conjunction with the Department of Health and Aged Care.

6.1.5 Future work

A future area of work will be to examine the possibilities for expanding e-commerce for online transactions between key funders and providers in both the health and community sectors.

6.2 Further develop information management practices to improve the availability of aggregate health data for research, policy and planning purposes to provide a more efficient and effective health system

Introduction

Sound information is the cornerstone to building a better health care system. At every level of the system consumers, practitioners, managers, policy makers and the general public are seeking more information about health and health services for better decision-making and increasingly, for greater accountability.

To develop a better understanding of the interaction between health care delivery

and the health of the population and to develop a more strategic approach to health care delivery requires bringing together public health information (such as births, deaths and cancer registry data) with information gathered from individual health encounters such as hospital morbidity and MBS data. Such data linkages can provide a more complete picture of health care and where more resources should be targeted for the greatest gains.

The following section discusses how information technology can be used in the near future to link data currently collected under different programs, and how, in the future, electronic health records can provide an even greater opportunity to collect data across the care continuum.

6.2.1 Establish the framework for the use and management of national clinical/administrative data

Context

In the health sector, as in government more generally, there is a growing demand to systematically assess the quality and outcomes of programs. There is also a greater emphasis on evidence-based health care. These pressures result in significant demands to collect, collate and analyse increasing amounts of health data.

Governments and service providers require quality data to assist with balancing increasing demands for health services and products within constrained



budgets, to assess the impact of programs and interventions and to support planning for health services. Australia's ageing population and the increasing availability of new services and products driven by research and technology are all adding substantially to the need for policy makers and planners to be able to: forecast trends with greater accuracy; determine the cost-effectiveness of various treatments and interventions proposed for the same conditions; determine the contribution that health care makes to the health status of the population; evaluate where the most value for the dollar lies along the endless possibilities for spending money on health care; assess the evidence base for new and existing interventions; monitor and evaluate quality of care and health outcomes; identify best practice; and, identify where quality improvement is most needed and monitor improvements over time.

At all levels of the health care system, there is an increasing commitment to achieving more client-centred care with better coordination and continuity of care across services, settings and providers. However, a major barrier to achieving this is the current separation and fragmentation of care across these various levels that is also reflected in the separation of data. Despite a myriad of different data collections (mainly designed for administrative purposes), there is still relatively little readily available information about how well the Australian health care system actually delivers care or the extent to which it actually improves health outcomes. Some important gains can be made by linking existing datasets but, in the longer term, a national system of health records, appropriately constructed, would permit

administrative, planning and research information to be gathered in multiple ways for research and planning purposes. This does not, of course, imply that a large, centralised data base is required. On the contrary, we are likely to be dealing in an environment that is made up of a number of electronic health records, each designed for specific purposes. This represents a distributed data environment but, with appropriate planning, the expectation is that aggregate data will be able to be drawn together for particular research, policy and planning purposes.

Guiding principles

As the difficulties encountered to date in building up a set of national performance indicators show, establishing and maintaining systems to collect, analyse and report such information places considerable burdens on providers and organisations, particularly in terms of time and financial costs. To ensure data quality, it must be in the interests of those who have to collect it. It is imperative, therefore, that information for policy and management purposes is collected as a by-product of operational systems. The overall objective, then, is to use data which will be collected within clinical and administrative information systems routinely as part of providing patient care — it is not about collecting whole new sets of data and thereby imposing additional and unnecessary burdens upon health care professionals. It is also important that any data collected can be fed back to those who have provided it ie providers and consumers.

While there is therefore a strong argument for better data for research, policy and planning purposes, there are also significant data protection issues that



need to be understood and addressed. Australian health consumers need to be assured that personal health information is protected by strong data protection arrangements. Privacy protection measures will need to be addressed in the design stages. Increasingly sophisticated mechanisms such as the use of 'pseudo-identifiers' which can allow data about an individual to be linked to other data about the same individual but still protect his/her identity may well prove useful as an additional level of surety.

Any information management initiatives using emerging technologies will need to take into account the substantial amount of work that has already been undertaken in health to date through the National Health Information Management Group in developing data standards and definitions.

Apart from specific research projects, most of the data for policy and planning purposes would only be required in a de-identified format, much the same way that census data is made available to researchers and planners.

Objectives

1. Enhance data linkages across existing data sets.
2. Establish a framework for a national clinical/administrative dataset (in a distributed data environment).

Progress to date

The Commonwealth, states and territories, various institutes such as the Australian Institute of Health and Welfare and many academic organisations are already undertaking projects that involve linking data from the limited, mainly administrative, data already available or

by utilising data that has been specifically assembled – such as data drawn from sources such as cancer registers. For the most part, the linked data is limited to operational and acute care data. An exception, however, is a collaborative project involving the Department of Health and Aged Care and the Health Department of Western Australia which is linking Medicare Benefits Scheme (MBS), Pharmaceutical Benefits Scheme (PBS) and hospital morbidity data under strong privacy protocols, and using only de-identified data¹⁹.

The states and territories have not routinely had access to MBS and PBS data. However, under the recently negotiated Australian Health Care Agreements, the states and territories will be able to access de-identified unit record data on MBS and PBS utilisation and costs for medical and pharmaceutical services provided within their own jurisdiction. The actual data items are still being negotiated.

Proposed actions

As well as considering privacy issues in the design of any proposal, agreement about privacy/data protection issues will be progressed through actions currently underway at the Commonwealth level (see section 3.1.1). In this context, data protection issues for the health sector will specifically address the proposal for enhanced data linkages (existing data sets) and the creation of a new national clinical/administrative dataset.

A new national dataset is expected to be constructed from individual health records as described in Section 5.1.1, within an appropriately rigorous data protection

19. De-identified data refers to data for which the risk of identification of a particular individual is very low.



environment. The framework for this dataset will need to take account of national information needs which have already been identified by the National Health Information Management Group and build on the National Health Data Dictionary. There is a growing proliferation of different types of data collections such as the establishment of specific disease registers which needs to be coordinated across jurisdictions and across conditions. A national clinical/administrative dataset would assist in bringing this work together more cohesively. Also, it must be understood that the proposed national clinical/administrative dataset will not form one large, central database. It is most likely to be held in a distributed environment. Sub-sets of data will be drawn together from individual electronic records held across the health sector for analysis. For some purposes, eg PBS and MBS data, the need for longer-term storage as central databases will need to be addressed. The proposed national Electronic Health Records Taskforce will be a vehicle to assist in defining a national clinical/administrative dataset to be based on the data collected for individual health records (see diagram 5.1.1). A plan of

action will be expected as an output – presenting options to Australian Health Ministers.

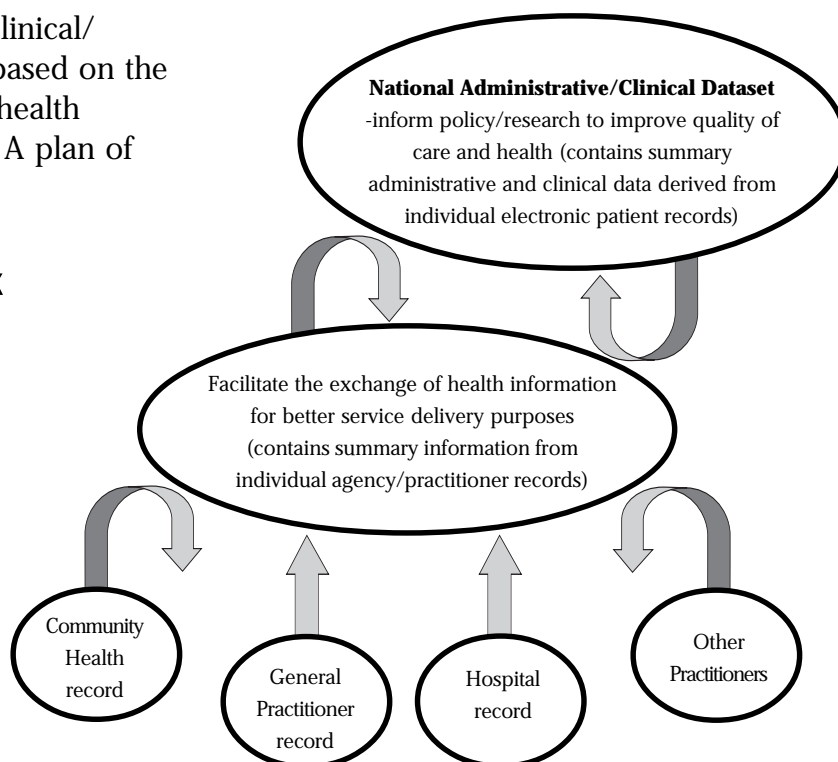
Timetable

Report on the nature of the framework required for a new national clinical/administrative dataset and options for its planning and development to be provided to Australian Health Ministers – by mid 2000.

Responsibility

Commonwealth Department of Health and Aged Care to initiate. National Health Information Management Group to be involved. Report to be prepared by the Electronic Health Records Taskforce (see section 5.1.1) and referred to Australian Health Ministers through the National Health Information Management Group and the Australian Health Ministers' Advisory Council.

Diagram 6.2.1
Proposed framework
for development of a
National
Administrative/
Clinical Dataset
derived from
individual electronic
patient records (in a
distributed data
environment)





Part Seven – Export of Australian Online Health Services

7.1 Expand markets for Australian online health services

7.1.1 Market development for online health services

Context

Internationally, market opportunities are opening up in the areas of health information and communications technologies with the increasing recognition by governments that health information technology is now a fundamental part of the health system infrastructure. While Australia is a relatively small country, its health care sector is in a strong position to participate in overseas markets. Australia is recognised internationally for exacting standards of medical training and a high level of medical expertise. The high regard that exists overseas for the quality of Australia's health system is exemplified by requests from regional governments for help in developing their own health systems.

Australia is also a world leader in both the introduction and uptake of telehealth services, and it has a market edge within

the Asian-Pacific region due to a compatibility of time zones.

Notwithstanding the above general positive settings, the submissions to the House of Representatives Standing Committee on Family and Community Services²⁰ enquiry into telemedicine indicate that Australia's greatest potential for export of online and related services lies in niche markets.

Niche areas identified by the enquiry include:

- health computer software;
- teleradiology;
- health education via video-conferencing by universities and teaching hospitals;
- standards;
- telepsychiatry; and
- telerenal medicine.

Consumer health information has also been identified in the health industry as a potentially large market for development. The Victorian Department of Human Services is in the final stages of developing the Health Channel which is an internet-based entry point for both consumers and providers and its VIEW21 collaborative project has received significant global interest. The Department of Health and Aged Care is

20 House of Representatives Standing Committee on Family and Community Affairs, *Health Online: A Report on Health Information Management and Telemedicine*, Commonwealth of Australia, Canberra, October 1997.



also developing the *HealthInsite* (see section 4.1.1). Clinical protocols may also offer another key market development area. However, issues such as intellectual property in relation to marketing online services has not yet been well explored in the health sector. Clear models for product development, intellectual property, royalty and revenue management will need to be developed before online services can become market developed.

Export opportunities are important not only in terms of balance of payments and employment opportunities for this country but they are also a way of recouping the substantial investment which has been made in developing the knowledge, skills and infrastructure of the health sector.

Currently, the overall approach of the Australian health care sector to developing opportunities is fragmented and uncoordinated. To progress Australia's export of health information and communication technology goods and services, a concerted, national approach is required, thereby reducing the significant amount of duplicated time and resources required to seek out overseas markets.

Objectives

1. Develop a coordinated national approach to identifying and developing potential export markets for Australian telehealth and health informatics services.

Progress to date

In its role as national health ministry, the Commonwealth Department of Health and Aged Care has forged links with

other governments, international agencies and multilateral donors (World Bank and Asian Development Bank), and used its participation in regional and international forums to promote the Australian health sector. At a national level, Commonwealth agencies have worked to support the export of health industry products and services (including the export of health information technology and telecommunication services), through initiatives such as the Australian Health Industries Development Forum and the Australian Health CD-ROM promotional package.

The Commonwealth Department of Industry, Science and Resources has provided \$2.3m over three years to the Collaborative Health Informatics Centre (CHIC), a national organisation based in Queensland. CHIC also receives funding from the Queensland Government and the private sector. One of its key aims is to bring together health professionals and information technology and telecommunications providers as a 'one-stop shop' for information technology firms interested in exporting to the Asia Pacific region.

To enhance awareness of Australian health industry capability, Austrade has arranged participation in a number of major international trade promotions in which a number of health information technology companies have been represented. Suppliers of health industry software are also listed on Austrade Online, a searchable database of Australian companies, products and services targeted at overseas buyers.



Proposed actions

1. Commonwealth Department of Health and Aged Care to provide ongoing support to the Australian Health Industry Development Forum to ensure that the Forum and its Country Focus Groups continue to function. Part of this support will be to establish an interactive health website that enables the health industry to network and identify national and export market opportunities.
2. Develop a project proposal to review the current and future market potential for online health goods and services and refer it to the National Health Information Management Advisory Council for consideration. This could involve a proposal for engaging an appropriately skilled 'ambassador' to network internationally – with funding shared by government and the private sector.

Timetable

Establish health industry network website
– by 2000.

Review impact of website and appropriate level of support for the Australian Health Industry Development Forum – by 2001.

Refer project proposal on the market potential of online health services to the National Health Information Management Advisory Council – by 2000.

Responsibility

Commonwealth Department of Health and Aged Care.



A p p e n d i x O n e

S u m m a r y o f P r o j e c t s



PART 3 – LAYING SOUND FOUNDATIONS

Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
3.1.1 Privacy/data protection	<p>Objectives in this area involve:</p> <ol style="list-style-type: none">1. Development of nationally consistent data protection legislation that covers personal health information.2. Introduce additional measures (if necessary) to allow initiatives to proceed in a robust privacy framework in the area of communicating information for better coordinated care and in linking data for better policy and planning.	<ol style="list-style-type: none">1. Privacy Commissioner may also consider developing guidelines for the handling of personal health information to assist people to meet their obligations under the new legislative standards.2. Commonwealth Department of Health and Aged Care is also planning to consult with states and territories concerning ways of achieving a nationally consistent approach to privacy protection across both public and private sectors; and what additional legislative approaches may be required within the context of electronic data exchange for better coordinated care and data linking for better policy and planning.3. Attorney-General's Department and Privacy Commissioner to work together with Commonwealth Department of Health and Aged Care to develop any additional legislative proposals needed in light of any new policies for health information management.	<ol style="list-style-type: none">1. Commonwealth Department of Health and Aged Care. Attorney-General's Department.	<ol style="list-style-type: none">1. Introduction of the <i>Privacy Amendment (Private Sector) Bill 1999</i> - December 1999.2. Discussions with states and territories on additional health data protection requirements to develop a national approach to linking data for better coordinated care and improved policy and planning purposes — June 1999.	High

Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
3.1.2 Security and authentication	<ol style="list-style-type: none"> 1. Deliver a public key infrastructure to enable secure, acceptable communication within the health sector. 2. Establish a registration authority for the purposes of supporting current and future HIC electronic business. 3. Introduce the technology to enable authentication, integrity, confidentiality and non-repudiation of health information transmitted across the health sector. 4. Introduce a Certification Authority and a Registration Authority with roles and responsibilities acceptable to the health sector. 5. Gain experience in the policies and procedures required to operate a registration authority. 6. Provide a foundation to support paperless business within the health sector. 7. Obtain feedback and guidance from health sector professionals in the use of digital certificates. 	<ol style="list-style-type: none"> 1. Develop public key infrastructure policies and procedures. 2. Collaborate with government, health sector and industry. 3. Develop the Registration Authority role, select an initial Certificate Authority, and develop/acquire the technology. 4. Develop an implementation strategy. 	The Health Insurance Commission has responsibility for the Public Key Infrastructure Project, and is consulting widely in the sector and with the peak body GPKA.	<ol style="list-style-type: none"> 1. Commence issue of certificates second quarter of 2000. 	Medium
3.1.3 Health care provider and location directory services	<ol style="list-style-type: none"> 1. Gain agreement to a national approach to health care provider and health care location directory services. 2. Develop a plan to deliver health care provider and location directory services. 	<ol style="list-style-type: none"> 1. The HIC will continue to explore avenues for sharing the Medicare Provider File information with a view to improving communications in the health sector. 2. To build the base elements of national health care provider and location directory services through the introduction of public key technology, the HIC will register health care providers and health care locations for the issue of public key certificates. 3. The HIC will explore this avenue of development with relevant stakeholders. 	Health Insurance Commission, States and Territories	2000	Medium



Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
3.1.4 Patient identification	1. To gain agreement to the establishment of a system of patient identification.	<ol style="list-style-type: none"> 1. Refer the issue of patient identification to the proposed Electronic Health Records Taskforce (see section 5.1.1) and request that the Taskforce develop options for Health Ministers. 2. Progress the privacy issues associated with the use of a health identifier in the context of the broader action on privacy matters (see section 3.1). 3. Review State/Territory activity. 	Commonwealth Department of Health and Aged Care	1999/2000	High
3.2.1 Develop standards for information management activities using information technology systems	<ol style="list-style-type: none"> 1. Develop standards (or agree on existing standards) that will underpin the development of e-commerce in the health sector and in particular: <ol style="list-style-type: none"> 1.1 Agree standards for clinical product numbering in health supply chain management. 1.2. Establish standards for electronic ordering/stock management, dispensing and payment that can be aligned to health records within clinical information systems. 1.3. Establish standards for electronic claims management. 2. Develop standards that underpin the development of a national framework for electronic health record systems. In particular: <ol style="list-style-type: none"> 2.1 Develop a data dictionary that will be used in relation to a national electronic health record system(s). 2.2. Develop classification and coding systems for electronic health records. 2.3. Develop a thesaurus for an electronic health record. 2.4. Develop messaging standards for communications beyond those identified under e-commerce. 	<ol style="list-style-type: none"> 1. General <ol style="list-style-type: none"> 1.1 Develop a formal response to the submissions to the standards workshop. Provide guidance to IT/14 and other players on a co-ordinated approach to standards development and implementation. 1.2 Examine the possibility of a high level working group on data standards. 2. E-commerce <ol style="list-style-type: none"> 2.1 Develop a process (in association with the Project on Electronic Commerce and Communication) to agree on an electronic catalogue and a standard for product identification. 2.2 Establish a process to develop agreed arrangements for messaging – based on harmonisation of UN/Edifact and HL7. 2.3 Adopt additional messaging standards for patient billing, claim and eligibility checking. 3. Electronic Health Records <ol style="list-style-type: none"> 3.1 Conduct a data workshop to examine the range of issues associated with managing continuity between health records, service delivery data, and data aggregation for multiple purposes. 3.2 Establish a feasibility study for a clinical thesaurus. 	Commonwealth Department of Health and Aged Care, Standards Australia, AIHW, National Health Information Management Group, and other agencies with an interest in standards development.	Ongoing	High (data standards)

Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
3.2.1 cont. Develop standards for information management activities using information technology systems	3. Develop additional standards required for telehealth services within an overall standards framework (ie, using generic health or other industry standards except where they are inappropriate or incomplete). 4. Develop additional standards required for general practice within an overall standards framework (as above). 5. Develop standards for pharmaceuticals. 6. Support additional standards development for other sectors such as nursing, as the need is identified. 7. Test the implementation of standards, to ensure feasibility, comprehensiveness and usefulness, as a precursor to national release. 8. Ensure that standards developed or adopted in Australia are compatible with international developments 9. Develop standards required for knowledge base creation and use in decision-support. 10. Develop standards for security, intellectual property rights and ethics in the management of health information.	4. Telehealth 4.1 Develop standards in imaging and video-conferencing, in collaboration with the Australian Communications Industry Forum, the Australian New Zealand Telehealth Committee, Standards Australia and the General Practice Computing Group. 5. Pharmaceuticals 5.1 Coding standard for pharmaceuticals. 5.2 Standards for electronic transmission of scripts. 5.3 Standards/system for aggregation of de-identified prescribing data from general practice and pharmacy. 5.4 Standards for electronic decision-support in prescribing. 6. General practice 6.1 Develop a standard general practice based data set. 6.2 Convene a coding jury. 6.3 Identify a standard clinical classification code for general practice and investigate the possibility of a national licence. 7. International compatibility 7.1 Support Standards Australia to send appropriate Australian delegates to key standards meetings. 7.2 Support Standards Australia to chair ISO TC215. 7.3 Support widespread discussion through workshops and other activity of specific issues under consideration by ISO TC251.	Commonwealth Department of Health and Aged Care, Standards Australia, AIHW, National Health Information Management Group, and other agencies with an interest in standards development.	Ongoing	High (data standards)



Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
3.2.2 Establish a process for endorsing standards on a national basis	1. Establish a process for endorsing standards for adoption on a national basis in the health sector.	1. Develop options for an existing or new body to be assigned responsibility to identify standards that need national endorsement and the authority for endorsing the standards that are referred to it for this purpose. 2. A paper on this matter to be developed by a NHIMG/IT/14 working group for NHIMAC.	NHIMG/IT/14 working group to consult with key stakeholders, including commonwealth and state health departments, HIC, NOIE and private sector representatives.	Paper to be prepared for NHIMAC by 2000. Medium	
3.3.1 Increase the affordability of and access to telecommunications services in rural and remote Australia	1. Ensure that affordable access to quality telecommunications services is available for the health sector and consumers in rural and remote Australia.	1. Multipurpose Services established under the Rural Multipurpose Health and Family Services Network will receive funding to provide them with an information technology infrastructure. 2. Develop a health sector approach to access and affordability issues for rural and remote Australia – develop a State by State and Commonwealth submission on future needs and funding requirements.	Australian New Zealand Telehealth Committee of the Australian Health Ministers' Advisory Council. Commonwealth, state and territory health departments in relation to the Multipurpose Services.	1. Develop a comprehensive view of the needs of the health sector and define proposed approaches to meeting needs in the form of a needs and funding submission – 2000. 2. Under the Rural Multipurpose Health and Family Services Network, 30 Multipurpose Services will be established by 2002.	Medium

Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
3.3.2 Develop a set of workable incentives and support systems and address key infrastructure and standards barriers to increase the take-up of information technology by general practitioners	<ol style="list-style-type: none"> 1. Increase the uptake of information management and information technology applications in general practice through the development of the necessary standards and communications infrastructure to support future computerisation. (See also section 3.6.1) 2. Develop strategies to encourage the rapid development of modular software for electronic prescribing, clinical decision-support and communications that meet appropriate standards for general practice. (See also section 3.1.4) 3. Develop strategies to support and encourage general practitioners to invest in, and utilise, information technology systems. 	<ol style="list-style-type: none"> 1. Provide direct financial incentives to support computerisation through the Practice Incentive Program. 2. Develop a standard general practice based data set. 3. Convene coding jury and finalise in collaboration with the RACGP, establish agreement on clinical classification code suitable for GPs and explore feasibility of a national licence, maintenance and ongoing development of a coding system. 4. Coordinate training and support for GPs through the GPCG secretariat and involve divisions of GPs. 5. Develop standards for system maintenance and backup of practice based systems. 6. Support development of electronic health record architecture consistent with the overall framework proposed in this Action Plan. Explore feasibility of electronic decision-support developments suitable for general practice. 	Commonwealth Department of Health and Aged Care, state and territory health authorities, Medical Software Industry Association, GPCG and other related stakeholders.	<ol style="list-style-type: none"> 1. Commission development of minimum data set model by 7/1999. 2. Coding jury convened and reported during 1999. 3. Model for GP training/ support completed by 6/99. 4. Completion of standards for practice based IT system maintenance and back up specifications by end 12/99. 5. Development of a model for electronic health record (GPs) within framework recommended by the Taskforce on Electronic Health Records (3.1.1) – by July 2000. 6. Facilitate the development of electronic networks upon which national or state based IT networks can be built by June 2001. 	High



PART 4 – EMPOWERING CONSUMERS AND COMMUNITIES FOR BETTER HEALTH

Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
4.1 Develop a national approach to improving consumer access to health information.	1. To facilitate the provision of health information to consumers in appropriate formats.	1. Undertake a project to conduct a stocktake of activities and models for providing consumer access to health information which are or have been used by governments, health services, health workers and consumer groups. Develop core principles and key elements that underpin best practice for facilitating consumer access to consumer health information. 2. The NHMRC is developing a guide to preparing information for consumers for use by working parties and organisations preparing Clinical Practice Guidelines.	Department of Health and Aged Care, Consumer Focus Collaboration, NHMRC.	Timetable 1. Completion of project and production of project report – December 1999. 2. Consultation and completion of NHMRC guidelines – August 1999.	Medium
4.1.1 Establish the <i>HealthInsite</i> website	1. To implement an infrastructure which is capable of delivering quality and authoritative information and services to consumers and the health sector. 2. To implement a comprehensive Internet presence that supports the business objectives of the health sector and improves the ability of stakeholders to deliver services to consumers. 3. To promote two-way communication among consumers and the stakeholders. 4. To establish collaborative partnerships with stakeholders within the health sector. 5. To provide a consumer focused facility through which the health sector can deliver health information and services.	1. The prototype will be used to demonstrate <i>HealthInsite's</i> potential capabilities and scope to the Commonwealth Department of Health and Aged Care, state, territory and other prospective partners. 2. Development of initial partnering arrangements and content development process. 3. Feedback on the pilot service from a limited audience and groups. 4. An in-depth focus testing and review process will be conducted. 5. The evolution and building of <i>HealthInsite</i> will accelerate.	Commonwealth Department of Health and Aged Care.	There are three distinct stages in the project: 1. Proof of concept – July 1998 to March 1999. 2. Pilot Service – April 1999 to last quarter 1999. 3. Production – last quarter 1999 onwards, the evolution and building process accelerates.	Medium

PART 4 – EMPOWERING CONSUMERS AND COMMUNITIES FOR BETTER HEALTH

Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
4.1 Develop a national approach to improving consumer access to health information.	1. To facilitate the provision of health information to consumers in appropriate formats.	1. Undertake a project to conduct a stocktake of activities and models for providing consumer access to health information which are or have been used by governments, health services, health workers and consumer groups. Develop core principles and key elements that underpin best practice for facilitating consumer access to consumer health information. 2. The NHMRC is developing a guide to preparing information for consumers for use by working parties and organisations preparing Clinical Practice Guidelines.	Department of Health and Aged Care, Consumer Focus Collaboration, NHMRC.	Timetable 1. Completion of project and production of project report – December 1999. 2. Consultation and completion of NHMRC guidelines – August 1999.	Medium
4.1.1 Establish the HealthInsite website	1. To implement an infrastructure which is capable of delivering quality and authoritative information and services to consumers and the health sector. 2. To implement a comprehensive Internet presence that supports the business objectives of the health sector and improves the ability of stakeholders to deliver services to consumers. 3. To promote two-way communication among consumers and the stakeholders. 4. To establish collaborative partnerships with stakeholders within the health sector. 5. To provide a consumer focused facility through which the health sector can deliver health information and services.	1. The prototype will be used to demonstrate HealthInsite's potential capabilities and scope to the Commonwealth Department of Health and Aged Care, state, territory and other prospective partners. 2. Development of initial partnering arrangements and content development process. 3. Feedback on the pilot service from a limited audience and groups. 4. An in-depth focus testing and review process will be conducted. 5. The evolution and building of HealthInsite will accelerate.	Commonwealth Department of Health and Aged Care.	There are three distinct stages in the project: 1. Proof of concept – July 1998 to March 1999. 2. Pilot Service – April 1999 to last quarter 1999. 3. Production – last quarter 1999 onwards, the evolution and building process accelerates.	Medium



PART 5 – SUPPORTING CLINICAL CARE

Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
5.1.1 Develop a national framework for the use of electronic health records for service delivery purposes.	1. Development of a national framework for electronic health record systems for service delivery purposes ie a national framework for recording and sharing patient clinical information for health care service delivery.	1. Establish a national Electronic Health Records Taskforce (Commonwealth, state and territory, key stakeholders) 2. Develop an initial description of a framework of electronic health record systems, a plan and a timetable.	1. Commonwealth Department of Health and Aged Care to initiate. 2. C'wealth, states and territories to participate. 3. Peak organisations, clinicians, other health providers and consumers to be consulted. 4. Health Insurance Commission also to be involved in development of personal health identifier.	1. Establish a national Electronic Health Records Taskforce – by end 1999. 2. Taskforce report mid 2000.	High
5.1.2 Expand development of decision-support services	1. Establish a coherent approach to the development of decision-support systems and electronic clinical resources for health professionals. 2. Bring in new decision-support services .	1. The Commonwealth Department of Health and Aged Care to work with the medical profession, clinical colleges and the hospital sector to determine priorities for Commonwealth support for knowledge base and decision-support development. - gain agreement to a coordinated approach from key stakeholders; - identify key areas of decision-support that major users groups will want to adopt; and - devise action plan for development of specific decision support services.	Commonwealth Department of Health and Aged Care, General Practice Computing Group, clinical colleges, Health Insurance Commission, hospital sector	1. Development a framework and priorities for action – 1999.	Low

Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
5.2.1 Develop strategies to expand the appropriate and cost-effective use of telehealth services	To be advised.	To be advised.	ANZ Telehealth Committee, state and territory health departments, Commonwealth Department of Health and Aged Care.		Medium
5.3.1 Enabling electronic requests for diagnostic and treatment services	<ol style="list-style-type: none"> 1. Provide faster access to diagnostic and treatment services for both practitioners and consumers. 2. Achieve greater efficiencies by enabling diagnostic and treatment services, claimable under Medicare, to be requested electronically. 3. Understand the benefits to the health sector and patient care of electronic ordering. 4. Understand and address the business, technical, privacy, legal and clinical risks associated with the introduction of electronic communications (requests). 	<ol style="list-style-type: none"> 1. Conduct a 6-9 month pilot project at New Children's Hospital to evaluate electronic requesting of diagnostic services for private patients. 	Health Insurance Commission, New Children's Hospital (Sydney), Commonwealth Department of Health and Aged Care, NSW Health.	1999/2000	Medium



PART 6 – USING INFORMATION TO BUILD A MORE EFFICIENT AND EFFECTIVE HEALTH CARE SYSTEM

Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
6.1.1 Advancing the use of electronic supply chains in hospitals	Develop an electronic supply chain strategy which includes: 1. Establishing best practice models of supply chain benchmarks to educate and facilitate greater uptake of e-business supply chain methods in hospitals. 2. Establishing standards to facilitate e-business transactions within the hospital supply chain. 2.1 Establish a standard for product numbering in hospital supply chain operations. 2.2 Establish standards for electronic messaging within the sector. 2.3 Establish an electronic catalogue for health care products.	Planned health sector activities include: 1. Establishment of a new project focussed on: <ul style="list-style-type: none">- cataloguing state and hospital based activities to identify progress to date and potential models for hospital supply chain enhancement;- analysis of issues and barriers to health sector take-up of electronic commerce;- development of best practice models for re-engineering of clinical supply management;- reporting the findings to state health and hospital executives;- running a series of information workshops/seminars to communicate the opportunities, benefits and potential models for re-engineering; and- encouragement of state and territory based jurisdictions in the hospitals and states to embark on re-engineering activities within a national framework. 2. Ongoing support for continuing industry reforms through PeCC project sponsorship. 3. Supporting the development of the EANnet 4 Health electronic catalogue. 4. Continuous monitoring of diverse activities in the sector to ensure consistency with the developing national standards framework.	Commonwealth Department of Health and Aged Care, state and area health services and the private sector.	1. The audit and reporting activities will be completed by end September 1999. 2. The workshops/seminars will be held in the first quarter of 2000.	Medium

Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
6.1.2 Increase the level of electronic claiming for Medicare and the Pharmaceutical Benefits Scheme	<ol style="list-style-type: none"> 1. Increase avenues for electronic submission of claims. 2. Develop the HIC's electronic infrastructure to support expansion of electronic transactions. 	<ol style="list-style-type: none"> 1. The evaluation of the trial Medicare easyclaim electronic kiosk will be completed during 1999. 2. Develop a plan to transfer Med claims from x.400 network to Internet. 3. Evaluation of the Medicare connect trial in the ACT and NT. 4. Implementation of electronic transmission of in-hospital 'gap' claims. 	The Health Insurance Commission will coordinate these initiatives in partnership with clinicians, pharmacists, and the suppliers of practice management and pharmacy software.	Ongoing.	Low
6.1.3 Expand the use of electronic transactions in the Pharmaceutical Benefits Scheme	<ol style="list-style-type: none"> 1. Review the findings of the Pharmacy Intranet Project 	<ol style="list-style-type: none"> 1. Following consideration by the Federal Minister of Health and Aged Care in mid 1999, the final report on the Pharmacy Intranet Demonstration Project should be made public. Possible follow-up activities inc.: redesign of electronic prescription/pathology forms; piloting of electronic lodgement, assessment and payment of pharmacists' prescription claims; and investigation of potential for electronic transmission of prescriptions. 2. Consider the establishment of a pilot for a national coding system for the transmission of pharmaceutical data. 	Commonwealth Department of Health and Aged Care and Health Insurance Commission.	Minister for Health and Aged Care to consider report — mid -1999 Low	
6.1.4 Simplified Billing	<ol style="list-style-type: none"> 1. To increase the uptake of simplified billing by facilitating the electronic connection of billing agents, health funds, the HIC, hospitals and providers and to increase the uptake of simplified billing for private patients in hospital services. 	<ol style="list-style-type: none"> 1. <i>During the pilot</i> Consultation with stakeholders to finalise system requirements and identify future enhancements. 2. <i>Broader consultation</i> Broader consultation with providers and health funds determine potential for electronic transmission. 	HIC, Commonwealth Department of Health and Aged Care.	Pilot – September 1999 Broader consultation – ongoing	Low



Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
6.2.1 Establish the framework for the use and management of national clinical/administrative data	<ol style="list-style-type: none"> 1. Enhance data linkages across existing data sets. 2. Establish a framework for a national clinical/administrative dataset (in a distributed data environment). 	<ol style="list-style-type: none"> 1. Develop a plan of action presenting options to Health Ministers. 2. New national dataset expected to be constructed from individual health records, within an appropriately rigorous data protection environment. 3. Agreement about privacy/data protection issues will progress through actions currently underway at the Commonwealth level. 	Commonwealth Department of Health and Aged Care to initiate. National Health Information Management Group to be involved. Report to be prepared by the Electronic Health Records Taskforce (see section 5.1.1) and referred to Australian Health Ministers.	Report on the nature of the framework required for a new national clinical/administrative dataset and options for its planning and development to be provided to Australian Health Ministers – by mid 2000.	Medium

PART 7 – EXPORT OF AUSTRALIAN ONLINE HEALTH SERVICES

Strategic Priority Area	Objectives	Proposed Action	Responsibility	Time frame	Priority
7.1 Market development for Australian online health services	Develop a coordinated national approach to identifying and developing potential export markets for Australian telehealth and health informatics services.	<ol style="list-style-type: none"> 1. Commonwealth Department of Health and Aged Care to provide ongoing support to the AHIDE. Part of this support will be to establish an interactive health website to enable the health industry to network and identify market opportunities. 2. Develop a project proposal to review the current and future market potential for online health goods and services and refer it to NHIMAC for consideration. 	Commonwealth Department of Health and Aged Care.	<ol style="list-style-type: none"> 1. Establish health industry network website – by 2000. 2. Review impact of website and appropriate level of support for the Australian Health Industry Development Forum – by 2001. 3. Refer project proposal on the market potential of online health services to the NHIMAC – by 2000. 	Low

A p p e n d i x T w o

S t a t e a n d T e r r i t o r y P r o j e c t s



Part 3 - Laying Sound Foundations –

Key fundamental issues need to be addressed for initiatives in Health Online to proceed. These are the building blocks that must be in place to underpin all of the activity contained in later sections. They include:

- privacy, security and legal issues that concern the electronic transfer of health information;
- the development of national standards with international compatibility for health information management and information technology;
- infrastructure issues required to progress online activities in health;
- training and support for health workers and consumers; and
- research and development.

Project Title	Objectives	Responsibilities	Timing
Information Management Strategies	NSW Health collaboration to improve: <ul style="list-style-type: none"> • clinical information support; • information sharing for coordination of care; and • access to, and management of, information. Human Services Sector collaboration on: <ul style="list-style-type: none"> • data collection and exchange; • client identifiers; • provider infrastructure; and • intranet policy and services. 	NSW Health and Human Services Agencies	Strategies released in 1999 and action plans to be implemented over next 2-3 years.
Rural Telecommunications Strategy	Upgrade of rural telecommunications in accordance with Statewide Telecommunications Strategy to meet usage growth due to new applications, telehealth and internet/intranet. Preparation of Area business cases which forecast demand and seek funds for upgrades.	NSW Health Manager Telecommunications and Areas	Complete Statewide Telecoms Strategy review by December 1999. Rural Area Business Cases completed by June 2000.
Electronic Health Record Standards Development	Establishment of a standards framework for seamless interoperability of health information systems across the continuum of care.	NSW Health	Lead role in development of national standards by June 2000.
NSW Applications Architecture Project	Mapping of health service functions to system applications in a consistent way across all Areas. Facilitation of collaboration and sharing of applications in the mid long term.	NSW Health and Areas	Methodology developed in mid 1999. Application across all Areas by mid 2000.
(Pending outcome of State election) Passage of Data Protection legislation	Protection of personal information held by public and private organisations to a standard consistent with the National Principles for the Fair Handling of Personal Information.	Victoria	Staged implementation from 1999-2000. Full implementation 2000-2001.

Project Title	Objectives	Responsibilities	Timing
Implementation of privacy policy	Protection of personal information handled in the course of providing services funded by DHS to a standard consistent with the <i>National Principles for the Fair Handling of Personal Information</i> .	Victoria (coverage includes all funded service providers in the health, welfare and housing sectors)	1999-2000
Development of a privacy code of practice for the health sector	Protection of personal information held in the health sector.	Victoria	2000-2001
Development of guidelines for the sharing and matching of client data	Development of guidelines that allow client-centred service delivery while protecting privacy.	Victoria	1999-2000
Electronic Commerce Framework legislation	Legislation to promote and encourage electronic commerce by establishing legal recognition and protection of on-line transactions.	Victoria	1999-2000
Information, Information Technology and Telecommunication (I2T2) Strategy	Strategy to improve information technology and information management capabilities of hospitals.	Victoria	1997 – 2003
General Practitioner Database	Comprehensive and current statewide database of GP information for electronic communication.	Victoria	July 1999 – June 2000
XML Messaging	Proof of concept using XML virtual electronic medical record.	Victoria	July 1999 – June
2000 South-West alliance of rural hospitals	telecommunications infrastructure Establishment of a major rural health voice data communication infrastructure.	Victoria	July 1999 – June 2000
Change Management Program	Development of an information culture and increased capability of hospitals to re-engineer processes.	Victoria	1999 - 2003
Chief Information Officer skill development	Identification of opportunities for increasing the knowledge/skill base of CIOs and providing workshops, learning opportunities and supporting material (Gartner).	Victoria	1999 – 2003
Information Security Policy and Supporting Standards	Development and implementation of a policy which provides a clear direction for the protection of information holdings and the supporting infrastructure within Queensland Health.	Queensland Health	Implementation to be substantially complete by June 2000



Project Title	Objectives	Responsibilities	Timing
Service Delivery Network (SDN) Project	<p>Procurement and deployment of a broadband service delivery network to enhance Queensland Health's clinical and administrative IT&T based services throughout the State.</p> <p>The project will be progressed in 4 phases, namely:</p> <ul style="list-style-type: none">• Provision of increased communications capacity, performance and resilience between an initial 28 key locations, to be known as the SDN Broadband Core;• Development of "turn-key" service solutions to be delivered over the SDN Broadband Core addressing business requirements for health service solutions such as telemedicine, specialised performance data network (e.g. high availability), and standardised directory services;• Integration of an SDN based Remote Access Network to service the needs of roaming clinical practitioners and other Queensland Health remote telecommuters; and• Ability to extend the SDN Broadband Core beyond the 28 initial locations in future with similarly structured technology or an alternative technology (e.g. satellite) as a "turn-key" solution.		
Remote Access Project	<p>Phase 1: Provision of a dial in access for accepted clients either from within Qld Health or Third Party Organisations; and</p> <p>Phase 2: Ensured secure electronic file transfer of patient information across the Internet.</p>	<p>Phase 1: Queensland Health The secure electronic file transfer component (Phase 2) is being investigated in conjunction with the Health Insurance Commission, Division of General Practice, Queensland Medical Laboratories, and Sullivan & Nicolaides.</p>	<p>The project is proceeding to Pilot at Corporate Office and Cairns by the end of 1999 for phase 1, which has been trialed and deemed successful in an Integration Phase.</p>
Health Data Protection Group	Establishment of a Health Data Protection Group.	SA	
Mental Health Connectivity	Improved levels of connectivity within units that provide community based mental health services.	SA	June 2001
Wireless Wide Area Network for the Disability Sector	Establishment of a wireless wide area network for providers of disability services in the metropolitan area.	SA	June 2000

Project Title	Objectives	Responsibilities	Timing
Improved Infrastructure	Improved levels of infrastructure within individual hospitals and health care units.	SA	Ongoing throughout 1999/2000 and beyond
Expression of Interest and Request for Proposal for the 'Provision of Information Management Services to Western Australian Government Health Services'	<p>Establishment of an Alliance with a Principal Provider. The alliance is required to work towards the implementation of its Strategic Information Management Environment (SIME) to support improved delivery of health services to the WA public.</p> <p>In addition to the alliance functions, WAGHS require the Principal Provider and its consortium partners to deliver operational information systems services. The provision of both is fundamental to the successful management and development of information services in WAGHS.</p> <p>The SIME report identified opportunities for improving service delivery and obtaining greater economies of scale through a more integrated approach to information management. A key component in capitalising on opportunities is the development of strategic capability. The alliance is expected to provide this capability to WAGHS.</p>	WA	An EOI was issued in March 99. A short list of organisations was selected and the RFP was issued to these organisations on 10th September 1999. The objective is to have the RFP evaluation completed by December 1999 and due diligence contract negotiations commence in January 2000.
State-Wide Client Registration Project	Development of a single client identifier mechanism within the Department of Health & Human Services.	TAS - Statewide	
SITE Roll-Out	Implementation of a Standard Information Technology Environment.	TAS - Local	On-going
SITE Rollout to 50+ Rural and Remote locations	Continuation of the Standard Information Technology Environment rollout to 50+ rural and remote locations within the Community & Rural Health Division.	TAS - Local	30 Jun 2000
Data Protection and Security of Health Information	Development of Information Privacy Principles for the NT – to be consistent with national Principles.	NT	July 2000
Patient Master Index	Development of a unique patient identifier for the ACT health sector, used by the public hospitals, community care and other key health care providers	ACT (DHaCC)	Progressive roll-out in local public hospitals (by end 1999), community care agencies (by end 2000), private health service providers (2001) and possibly into general practice.



Project Title	Objectives	Responsibilities	Timing
IT Modernisation	Replacement of infrastructure in all ACT health portfolio agencies i.e. The Canberra Hospital, Calvary Hospital, ACT Community Care and DHaCC. The ACT Government Wide Area Network is being upgraded. Desktop hardware and software is being upgraded with Year 2000 compliant items. In addition a number of Home and Community Care (HACC) funded non-government agencies are being provided with desktop PCs, email and internet capacity and standard NT operating system, Microsoft Office and business accounting systems.	ACT DHaCC	December 1999

Part 4 - Empowering Consumers and Communities for Better Health – The following initiatives improve consumer access to health information, particularly through the use of information and communications technologies. They are intended to build on the existing network of non-government support services.

Project Title	Objectives	Responsibilities	Timing
Health Consumerism Study	Assist NSW Health to develop a vision and strategies towards best practise in the delivery of health services to consumers.	NSW Health	Initial Discussion Paper completed in September 1999. Feasibility Study to be completed by March 2000.
Consumer Health Information Kiosks	Delivery of health access and consumer information in selected shopping centres in metropolitan Sydney.	Selected Area Health Services	Kiosks installed in March 1999 Evaluation targeted for early next year.
Better Health Channel Access project	Improved access to the Better Health Channel through placement of access points in high traffic health waiting areas across the State.	Victoria	June 2000
Better Health Channel Stage 2	Expansion of the range of consumer focussed health information through new articles, tools and linkages.	Victoria	June 2000
View21	Accredited web based consumer health infrastructure with collaboration from health foundations and institutes.	Victoria	September 1997 – ongoing
Queensland Health Information Network (QHiN) Intranet and Internet	Provision of timely, up-to-date, health information to consumers and providers of health services, the health industry, government and community which is highly valued. Make available high quality, timely and relevant information which encourages people living in rural and remote areas of Queensland to take individual responsibility for health care. Information exchange with health service partners. Provision of a high quality, dynamic and accessible knowledge based resource for the Department of Queensland Health, which contributes significantly to the development of a highly skilled and knowledgeable workforce.	Queensland Health	Ongoing
Investigation of call centre options	Investigation of various options for the establishment of call centres.	SA	
Various online services initiatives	Consideration of a number of initiatives for improving consumer access to health information.	SA	



Project Title	Objectives	Responsibilities	Timing
Healthy.Communities@sensw	Provision of a community-focused online health information service to the people in the remote and rural areas of south east NSW. The project will provide internet, email, best practice advice and health advisory information to local communities.	ACT DHaCC and Southern Health Service	Subject to funding but due to commence implementation in January 2000
Consumer Access Centre	Provision of a single point of contact for health related information for ACT and regional health care consumers. The core of this service will be nurse based triage and referral using voice and internet based technologies. A Health Advisory Service for public health notices, Service Provider Directory and Best Practice Advice will also be provided.	ACT DHaCC	Expressions of interest currently being assessed (September 1999). Anticipated implementation early 2000

Part 5 - Supporting Clinical Care –

The following initiatives are concerned with the use of information and communications technologies to support clinical care through:

- Better management of clinical information to support care;
- Increased availability of online health services to provide direct clinical care; and
- Increased use of online applications to support efficient clinical practice.

Project Title	Objectives	Responsibilities	Timing
Clinical Point of Care Systems Tender	Identification of Clinical point of care solutions for NSW Health System. Support for clinical care across the continuum of care. Initial focus on results reporting and order management.	NSW Health	Request for Information closes in November 1999 Implementation likely to begin late 2000
Review of Clinical Workstations	Examination of approaches, products and dependencies of clinical workstations now coming to market.	NSW Health (in consultation with ANZCIO)	Review by end October 1999
GP IM&T Strategy	Facilitation of progressive adoption of IM&T and the interlinkage of GP's into the NSW Health System.	NSW Health, General Practise Advisory Council, and GP IT Strategy Steering Committee	1999 to 2003
Albury Wodonga Regional Electronic Health Record	Development of a Regional Electronic Health Care Record solution for patients in public and private sectors. Foster collaborative effort between States, between Human Services Providers and between Public and Private Sectors.	NSW Health and Victoria Health with leadership by the respective Area and Regional	Administrations Feasibility study completed by early 2000
Clinical Data Repository	Completion of a feasibility study to establish comprehensive and integrated statewide database of clinical information.	Victoria	Completed December 1998
Clinicians' Health Channel	Provision of integrated clinical reference information, publications and protocol publishing at the clinicians workstation.	Victoria	1999 – 2003
Trauma Registry	Establishment of a trauma monitoring system including physiological measures and trauma levels.	Victoria	December 1999 – ongoing.
Electronic Discharge	Implementation of electronic transfer of discharge information to general practitioners and post acute care providers.	Victoria	1998 – 1999
Smart Card Trial (Health Key Project)	Demonstration of smart card use for integrated health care.	Victoria	June 1998 – December 1999
TeleRadiology	Linking of rural hospitals with metropolitan teaching hospitals specialists for imaging result reporting.	Victoria	1997 – ongoing



Project Title	Objectives	Responsibilities	Timing
Community Health Profiles	<p>Provision of information concerning services provided by the Department, the region or Health Service District, demographics, areas of social support, schooling, sports facilities etc for potential employees of Queensland Health.</p> <p>It is hoped that this information will assist in the recruitment of health practitioners in rural and remote areas of Queensland.</p>	<p>The Commonwealth Department of Aged Care, Brisbane, Queensland Health and CMENet met to collaborate in the development of the profiles as a method to avoid duplication and add value to the work already undertaken by each body.</p>	<p>End of 1999</p>
Clinical Information Systems	<p>Development of an information system that will provide clinical and relevant data to support the decision- making ability of clinicians.</p> <p>Project scope – Queensland Health (QH) believes its initial investment in clinical systems should be in a core set of functionality comprising:</p> <ul style="list-style-type: none">• order entry;• results reporting;• clinical pathways; and• clinical decision support. <p>This conclusion is based on the results of a recent Request For Information (RFI) which analysed the current market offerings and undertook site visits to facilities with relevant operational experience in clinical systems.</p> <p>Planned Outputs</p> <p>The project is delivering enabling technology that achieves the extensive benefits derivable from improved clinical decision support. Examples of such benefits include:</p> <ul style="list-style-type: none">• real time use of clinical pathways and standards of care;• access to on-line clinical decision support information repositories such as Medline, Micromedex;• detailed and comprehensive clinical information at the patient/ consumer level;• critical path analysis and variance; and• real time cost implications of particular care paths, including alerts where a more costly treatment is proposed over an equally effective but less costly alternative. <p>Planned Outcomes</p> <p>The project will establish an information technology environment capable of supporting the progressive implementation of clinical decision support, order entry, results reporting and clinical pathways.</p>	<p>Queensland Health</p> <p>The project at this stage is limited to QH major health facilities (approx top 20 sites) at this point in time, with the intention to expand to community and mental health centres in the long term.</p>	<p>Not known at this stage.</p> <p>The next steps are to develop a Request For Offer (RFO) document for shortlisted vendors and to establish a project team.</p>

Project Title	Objectives	Responsibilities	Timing
Queensland Health Information Network (QHiN) Intranet and Internet. (see also Section 4)	Provision of timely, up-to-date health information to consumers and providers of health services, the health industry, government and community which is highly valued. Information exchange with health service partners. Provision of a high quality, dynamic and accessible knowledge based resource for the Department of Queensland Health, which contributes significantly to the development of a highly skilled and knowledgeable workforce.	Queensland Health	Ongoing
Document/Policy Register	A uniform system of indexing information has been developed using the Australian Government Locator Service metadata standard for use by government departments and agencies to improve the visibility and accessibility of services and information over the intranet/Internet. A QHiN Document Management Form has been prepared which will automatically generate a QHiN Document Management page to contain hidden meta tags. A special search facility has been developed which will search on the meta tags.	Queensland Health	November 1999 to meet external / internal audit requirements. Continuous improvement.
TeleHealth Project – Queensland Telemedicine Network	Coordination and support for the use and further development of multidisciplinary telemedicine applications through: <ul style="list-style-type: none"> • supporting existing telemedicine applications such as ophthalmology, cardiology, foetal medicine, emergency care, intensive care, mental health, general practice, and radiology; • assistance in the development of new telemedicine applications; • training for telemedicine uses; • provision of information and specialist advice about telemedicine; • evaluating telemedicine applications; • developing corporate policies, standards and protocols for telemedicine applications; • national participation on telemedicine issues; and, • maintaining the Queensland Telehealth Coordinator's user group. The primary purpose of videoconferencing in Queensland Health is to support existing services in providing health care to people in rural areas. This is achieved through providing health practitioners with increased opportunities to professional support and providing a more timely service to people seeking health care. Over 70 percent of the videoconferencing activity occurs outside of South East Queensland. People living in some rural areas are now provided with an alternative option to travelling and waiting for visiting services, particularly in followup consultations. This generally occurs where videoconferencing technology can improve the existing service and there are sufficient specialist staff available.	Queensland Health The Queensland Telemedicine Network involves Queensland Health, Rural Health Training Units, Divisions of General Practice, and The University of Queensland, as well as liaison with other health related organisations and other government departments.	Radiology applications using DICOM compliant technology are being implemented in St George, Roma, Mount Isa, Weipa, Thursday Island, Maryborough, and Hervey Bay connecting to receiving sites at Princess Alexandra Hospital, Royal Brisbane Hospital, Townsville General Hospital, and Cairns Base Hospital. Commencement is expected in July/August 1999. Ophthalmology applications are being implemented in Cairns and the Royal Brisbane Hospital. This will allow existing sites in



Project Title	Objectives	Responsibilities	Timing
TeleHealth Project – Queensland Telemedicine Network (continued)			locations like Charleville or Stanthorpe to access urgent ophthalmology services from the Royal Brisbane Hospital. Commencement is expected in July 1999. Clinical practice guidelines have been developed for mental health services in Queensland to ensure that the videoconferencing technology is used in an appropriate manner. Printed copies will be available in July 1999. Various projects
concerning the Open Architecture Clinical Information System (OACIS) Provision of electronic access to	consolidated patient care information at the point of care for clinicians in hospitals. OACIS has been trialed in renal units across a number of major metropolitan hospitals. <ul style="list-style-type: none">• Pricewaterhouse Coopers has just completed a review of the OACIS implementation.• An Enterprise-wide business case is in progress.• A data quality consultancy for improving data accuracy and the linkage of patient records will be let	SA	Ongoing throughout 1999/2000
Rollout of Clinical Systems in hospitals	Continuation of the program of rolling out and upgrading key clinical systems in hospitals, including: <ul style="list-style-type: none">• Allied Health – Performance Indicator• ATS/PMI – Homer• Emergency – HASS –ED• Financials – Homer• Imaging – Kestral• Nursing – Excelcare• Pathology – ULTRA• Pharmacy – ASCRibe• Theatres – HASS- OT	SA	Ongoing throughout 1999/2000 and beyond

Project Title	Objectives	Responsibilities	Timing
Libraries Consortium	Substantially widen access to electronic and bibliographic databases in the health sector. Support for evidence based clinical practice and administrative decision making by providing desktop access to evidence based and peer reviewed research literature.	SA	June 2002
Medical Virtual Network	Facilitation of the exchange of client information by networking general practitioners in Adelaide's southern metropolitan.	SA	June 2000
Options Coordination	Development of a system to support the options coordination process in the disability services sector.	SA	June 2001
Mental Health Information System	Provision of accurate, complete clinical information offering a continuum of care through the use of patient-centric systems. Support clinical and case management by the service provider and management information required at service provider, area/regional management and Mental Health Department levels.	WA	Develop Business Case – December 1999 Develop and Implement Mental Health Information System – June 2002
Telehealth Tasmania Network	Statewide network of Telehealth facilities.	TAS - Statewide	March 2002
GP Internet projects	Computer Discharge Information to General Practitioners. Licit Narcotics. Notifiable Diseases.	TAS - Statewide	
HAS Quality Plan - Clinical Pathways	Streamlined and improved quality of patient care.	TAS - Local	
Picture Archiving and Communication System	Electronic storage of x-rays and CT scans.	TAS	
Mental Health	Sourcing and implementation of a Mental Health information management system covering community-based services. Commonwealth OARS system chosen and being implemented as stand-alone installations at various sites, with electronic data updating to a central facility.	TAS	1/10/1999



Project Title	Objectives	Responsibilities	Timing
Clinical Data linking - RHH/Hobart Private Hospital/Tas Uni	Interoperability of clinical information between private and public hospitals and the university.	TAS - Local	
Pathology	Improved accessibility and quality of pathology reports.	TAS - Local	
Peri-Natal	Implementation of the Peri-natal/Obstetrics Information System.	TAS – Local	
Pharmacy	Implementation of the pharmacy information and prescribing system to enable Y2K compliance and PBS prescribing to Hobart Private Hospital.	TAS - Statewide	RHH 22/11/99 LGH 1/12/99 NWRH 13/12/99
Physiotherapy	Datawarehouse. Patient Information system for allied health professionals.	TAS - Local	
PICIS Anaesthetic System	Anaesthetic information and monitoring system.	TAS - Local	
VARIS Cancer treatment database	Oncology patient information system.	TAS - Local	
Alcohol & Drug	Client information system.	TAS - Statewide	
Dental	DECADE and OASIS being replaced with EXACT.	TAS - Statewide	
Patient Transfers	Information system to control the transfer of patients to and from clinical/care facilities.	TAS - Local	
Ambulance Service – MIS Hospital Interface	Computer-aided dispatch Information System for ambulances. Interface to hospital systems.	TAS - Statewide	
Online Clinical Information and	Communication SystemsImplementation of the Online Clinical Information and Communication Systems: <ul style="list-style-type: none"> • Results reporting – August 1999 • Clinical Document Management (including discharge summaries) – October 1999 • Clinical Audit – July 2000 • Referrals - 2000 • Order Entry – 2000-2001 	NT	July 2000
NT Health Information Network – GP Network	Development and implementation of electronic delivery mechanisms for referrals, discharge summaries and other clinical information with NGO service providers.	NT	December 1999

Project Title	Objectives	Responsibilities	Timing
Electronic Medical Records Management	Implementation of Medical Records Imaging technology at Alice Springs Hospital.	NT	July 2000
Nursing Clinical Information System	Development of a Clinical Information System to support the delivery of patient care in NT hospitals.	NT	2000/2001
Health Information Networking	Provision of electronic links between GPs and other key health care providers for secure information exchange and communication in support of improved patient care and better health outcomes. Possible applications included immunisation notifications, discharge summaries, A&E attendance, hospital admissions, communicable disease notifications, hospital waiting lists, prescribed medications, pathology ordering and results etc.	ACT DHaCC	Project will commence 4th quarter, 1999



Part 6 – Using Information to Build a More Effective and Efficient Health Care System – The following initiatives are concerned with how better information management through the use of information and communications technologies can lead to the more effective and efficient delivery of health care in Australia.

Project Title	Objectives	Responsibilities	Timing
Health Information Exchange	Information Management reform across all areas and the Department. Improved data quality at all levels. Mechanism to enforce metadata consistently.	NSW Health and Areas	Completion of Warehouse implementation and IM reforms by July 2000.
Supply Chain Reform Program	Achievement of supply chain reform in at least 3 Areas by December 2000. Coordination of action plans at local, State and Commonwealth levels. Early pilot projects to demonstrate opportunities.	NSW Health Strategic Operation Reform Group and NSW Peak Purchasing Council	Linkage to National Consultancy, Benchmarking in pharmaceuticals and E Catalogue by December. Three AHS demonstration sites by December 2000.
e Business Pilots	Demonstrate innovation in e Business in conjunction with State Government Service NSW strategy.	NSW Health and Areas	Submissions for pilots projects made in Sept 1999. Implementation in Q1 & 2 in 2000.
Simplified Billing Implementation	Increased revenue for private and DVA patients in public hospitals. Trial of in-system and outsourced services arrangements. NSW Health & Areas Queensland Health Information Knowledgebase (QHIK) Provision of the metadata to better manage and more effectively use Queensland Health's information holdings. The registry structure is derived from the AIHW's NHIK. It contains a dictionary of data standards, an inventory of QHs data collections and systems and the Queensland Health information model. These components are linked. QHIK is disseminated on the QH Intranet and will soon be available on the QH Internet site in response to requests from external developers.	Queensland Health	Already released and in use, with ongoing development.

Project Title	Objectives	Responsibilities	Timing
Ecommerce trial	Conduct a trial of ecommerce technology. Trial being conducted at the Noarlunga Health Service.	SA	
Utilisation Review	Review of hospital utilisation rates by procedure and diagnosis for small areas. First stage of review just completed. Second stage has just begun.	SA	December 1999
Departmental Data Warehouse	Development of a Departmental data warehouse facility to provide enterprise wide reporting for executive, management and staff, starting with a financial reporting system.	SA	March 2000
Replacement system for Trendstar	Consideration and implementation of a successor to the Trendstar clinical costing system.	SA	December 2001
Interactive maps of Department of Human Services' facilities	Delivery of interactive maps of all facilities managed by the Department of Human Services across the Department's Intranet site. A trial has been successfully completed.	SA	December 1999
CHIME Phase III	Continuation of the State's involvement in the national CHIME project		Unknown
Pharmacy Dispensing Information and Purchasing System (DISP)	Delivery of effective and appropriately supported Pharmacy System to the WA Government health Industry.	WA	Release 1 – Standalone Implementation – November 1999 Release 2 – March 2000 Release 3 – June 2000
Telehealth Application	Community Client Health Profile Project	TAS - Statewide	March 2002
Public Health	Development of info system(s) to assist compliance with new Public Health legislation: <ul style="list-style-type: none"> • Water Monitoring; • Tobacco; and • Communicable Diseases 	TAS - Statewide	



Project Title	Objectives	Responsibilities	Timing
Orthothic & Prosthetic Services Tas	Assessment, acquisition and implementation of an Orthotic & Prosthetic system.	TAS - Local	No expected completion date set at this stage
Bar coding labelling projects	Implementation of bar coding of patient demographic labels.	TAS - Local	
Admission For Elective Surgery (Waiting Lists)	Development of effective reporting mechanism for waiting lists in the major hospitals.	TAS - Statewide	
DEMTRACS	Department of Emergency Medicine – Tasmanian Resource Ambulatory Care Computer System.	TAS - Statewide	
Radiology	Information management and patient booking/scheduling system.	TAS - Local	
Mental Health	Sourcing and implementation of a Mental Health information management system covering community-based services. Commonwealth OARS system chosen and being implemented as stand-alone installations at various sites, with electronic data updating to a central facility.	TAS - Statewide	1/10/1999
Health Information Management	Strategy Development of an Information Management Strategy for THS. Identification of strategically important information.	NT	December 1999
Health Information Integration	Integrated health data. Continuity of care case management for: <ul style="list-style-type: none"> • Chronic diseases; and • Cross sector health issues. 	NT	December 1999
Community Care Information System	Development and implementation of a client information system to support the provision of community based services.	NT	December 1999
Rural Health Information System	Development and implementation of a client information system to support the provision of rural based community and primary care health services.	NT	2000/2001
Data Warehouse (SHILO)	Development and implementation of data warehouse to support the management reporting and decision support needs of the THS.	NT	Infra-structure in place Ongoing development
Health Data Management Review	Review of the current processes for managing the numerous health data collections and the validation processes that support quality information management within the Department.	ACT DHaCC	Expected completion, October 1999